

**Notes:**

1. Results are posted in mg/kg
  2. Qualifiers:
    - U = Undetected at the sample detection limit (SDL)
    - B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)
- |  |
|--|
| Exceeds Earthworm Limit                                |
| Exceeds Plant Limit                                    |
| Exceeds Median Background Limit                        |
| Exceeds Earthworm and Plant Limits                     |
| Exceeds Earthworm, Plant, and Median Background Limits |
| SDL Exceeds Median Background Screening Level          |

DATE DRAWN: 4/30/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-1A  
Ecological  
Metal Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO.

59752

FILE NAME:

Falcon Refinery Base Map

J-01 S FR-013	
Aluminum	3010
Arsenic	0.51 B
Barium	86.4
Beryllium	0.1 B
Chromium	2.8
Cobalt	0.74 B
Copper	1.7 B
Iron	1760
Lead	7
Manganese	66.4
Mercury	0.0083 B
Nickel	1 B
Selenium	0.33 U
Vanadium	4.7 B
Zinc	40.7

J-05 S FR-033	
Aluminum	1250
Arsenic	1.2
Barium	25.9
Beryllium	0.24 B
Chromium	4.5
Cobalt	1.4
Copper	1.3 B
Iron	2.7
Lead	4280
Manganese	8.9
Mercury	0.0014 B
Nickel	0.56 B
Selenium	0.31 U
Vanadium	1.7 B
Zinc	10.4

J-09 S FR-025	
Aluminum	5460
Arsenic	1.2
Barium	25.9
Beryllium	0.24 B
Chromium	4.5
Hex Chrom	1.4
Cobalt	1.3 B
Copper	2.7
Iron	4280
Manganese	43.6
Mercury	0.013 B
Nickel	2.2 B
Vanadium	7.7
Zinc	16.6

J-02 S FR-016	
Aluminum	820
Barium	31.4
Beryllium	0.023 B
Chromium	0.9
Hex Chrom	1.3
Copper	0.685 B
Iron	540
Lead	4.6
Manganese	21.1
Mercury	0.0069 B
Nickel	0.29 B
Selenium	0.26 B
Vanadium	1.1 B
Zinc	23.6

J-06 S FR-019A	
Aluminum	609
Barium	6.25 B
Chromium	50.5 B
Copper	0.685 B
Iron	331
Lead	2.15
Manganese	9.3
Mercury	0.00535 B
Vanadium	0.985 B
Zinc	3.1

J-10 S FR-027	
Aluminum	1670
Arsenic	0.31 B
Barium	13.9 B
Beryllium	0.094 B
Chromium	2.9
Hex Chrom	1.9
Cobalt	0.43 B
Copper	0.86 B
Iron	2170
Lead	6.9
Manganese	21.5
Mercury	0.0047 B
Nickel	0.76 B
Vanadium	2.4 B
Zinc	22.8

J-03 S FR-009A	
Aluminum	509.5
Barium	24.3 B
Cadmium	0.56
Chromium	1.25
Copper	1.025 B
Iron	444.5
Lead	4.4
Manganese	11.9
Mercury	0.0096 B
Nickel	0.33 B
Selenium	0.305 B
Vanadium	1.15 B
Zinc	11.8

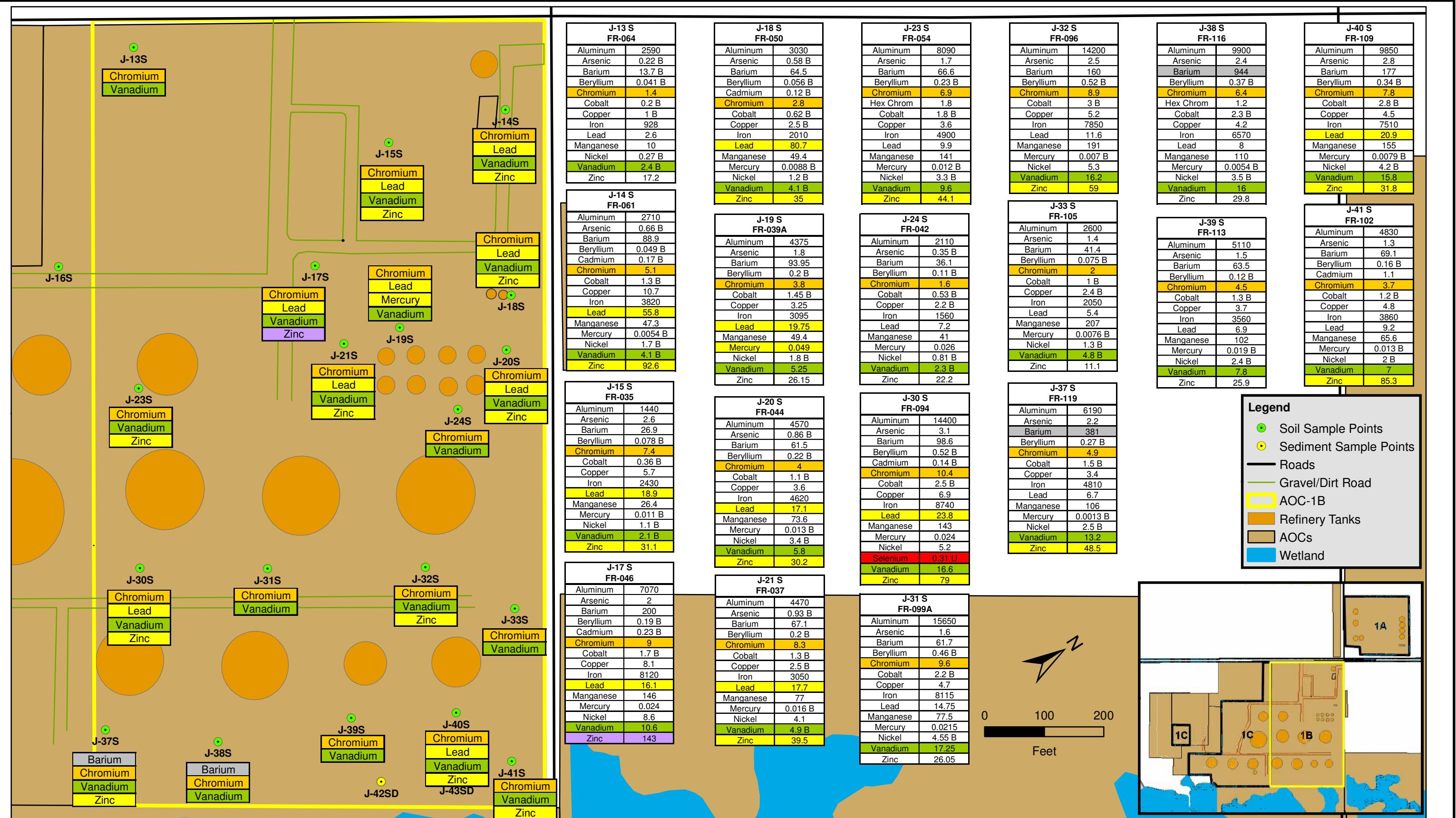
J-07 S FR-030	
Aluminum	2900
Antimony	0.54 B
Arsenic	2
Barium	1250
Beryllium	0.13 B
Cadmium	0.56
Chromium	13.3
Cobalt	2.5 B
Copper	23.5
Iron	4500
Lead	80.6
Manganese	39.6
Mercury	0.74
Nickel	4.3 B
Vanadium	5.1 B
Zinc	232

J-11 S FR-001	
Aluminum	14300
Arsenic	2.6
Barium	165
Beryllium	0.49
Chromium	11.3
Hex Chrom	3.1
Cobalt	3.3 B
Copper	5.1
Iron	7560
Lead	6
Manganese	121
Mercury	0.0037 B
Nickel	5.1
Selenium	0.37 B
Vanadium	22.3
Zinc	25.2

J-04 S FR-007	
Aluminum	786
Arsenic	0.23 B
Barium	23.4
Beryllium	0.2 B
Chromium	0.92 B
Copper	0.93 B
Iron	480
Lead	3.6
Manganese	15.7
Mercury	0.007 B
Nickel	0.35 B
Vanadium	1.3 B
Zinc	8.7

J-08 S FR-022	
Aluminum	5020
Arsenic	0.83 B
Barium	91.8
Beryllium	0.61 B
Chromium	3.6
Cobalt	1.3 B
Copper	3.2
Iron	3560
Lead	8.3
Manganese	102
Mercury	0.0014 B
Nickel	2.1 B
Vanadium	6.1
Zinc	80.3

J-12 S FR-004	
Aluminum	3550
Arsenic	0.57 B
Barium	36
Beryllium	0.092 B
Chromium	2.3
Cobalt	0.61 B
Copper	1.1 B
Iron	1860
Lead	


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Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits
Exceeds Earthworm and Median Background Limits
Exceeds Earthworm, Plant, and Median Background Limits
SDL Exceeds Median Background Screening Level

DATE DRAWN: 4/30/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-1B Ecological Metal Surface Soil Distribution Map**

 FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

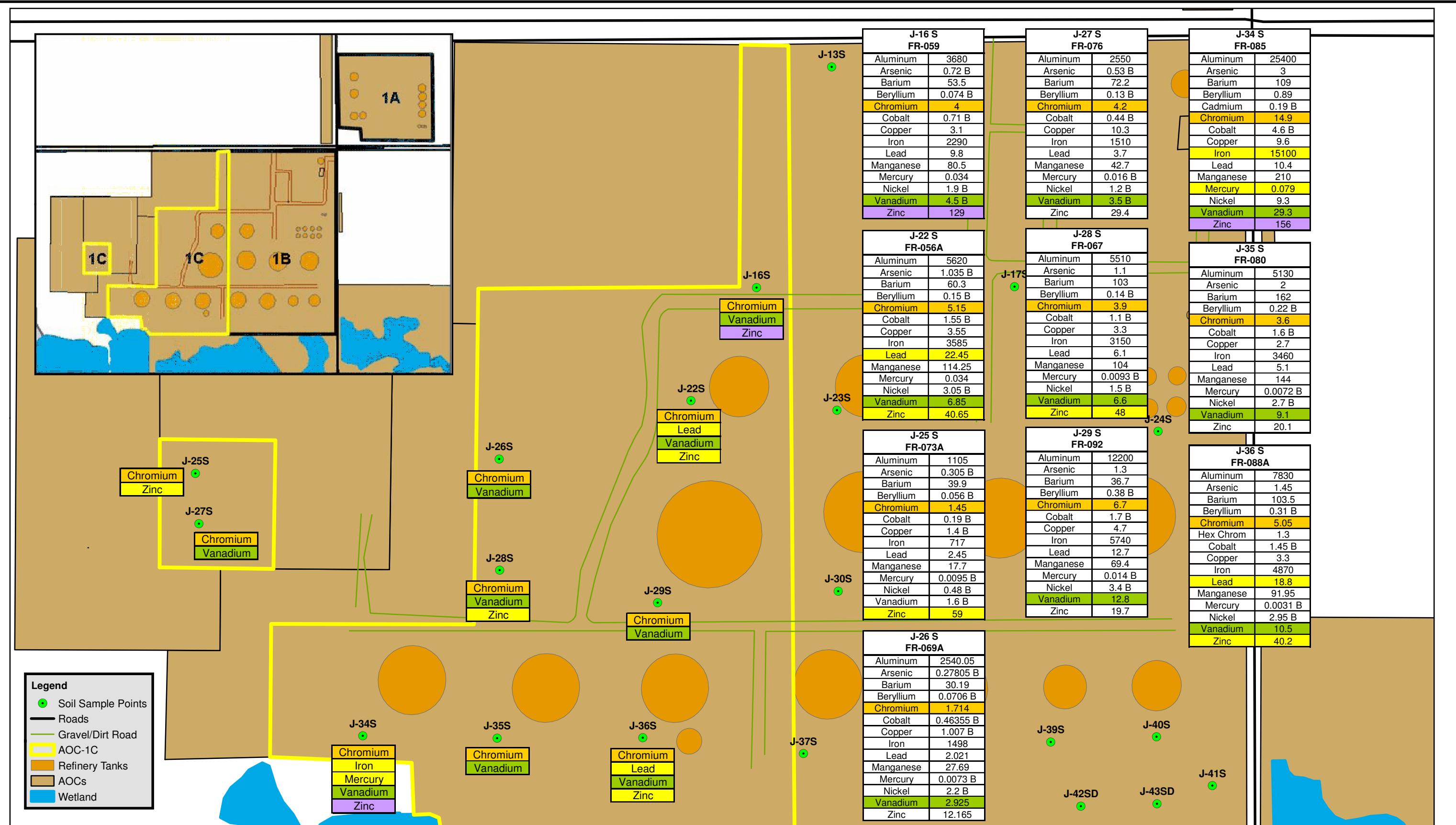
PROJ NO.

59752

FILE NAME: Falcon Refinery Base Map


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 FIGURE  
**21B**

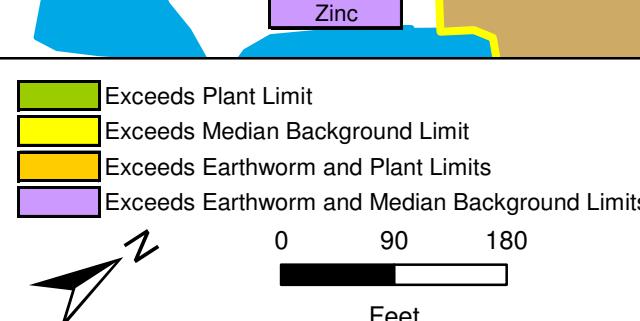

**Notes:**

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DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

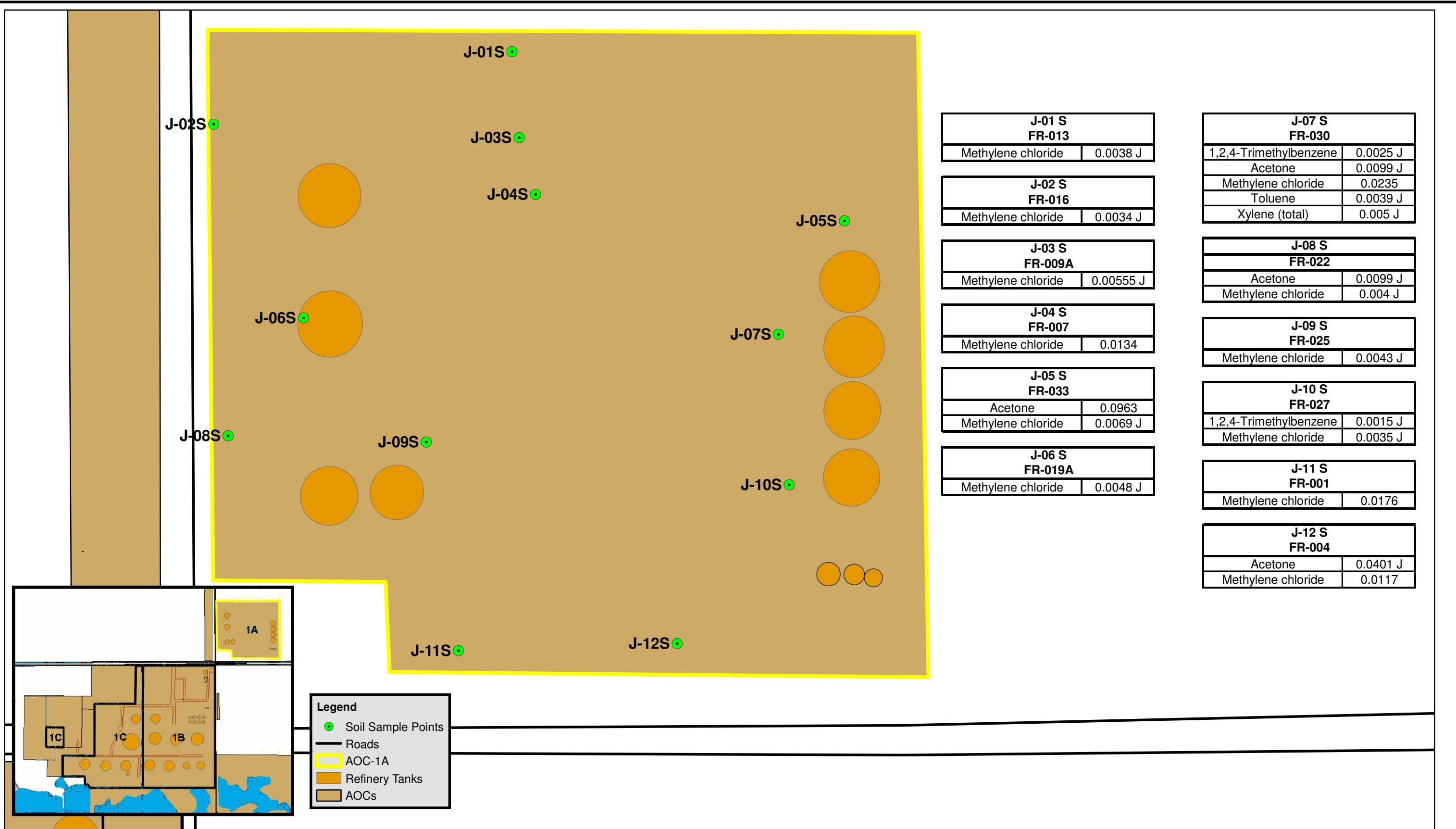
### AOC-1C Ecological Metal Surface Soil Distribution Map

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE  
**21C**

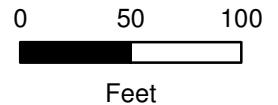


**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



DATE DRAWN: 4/30/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-1A  
Ecological  
VOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

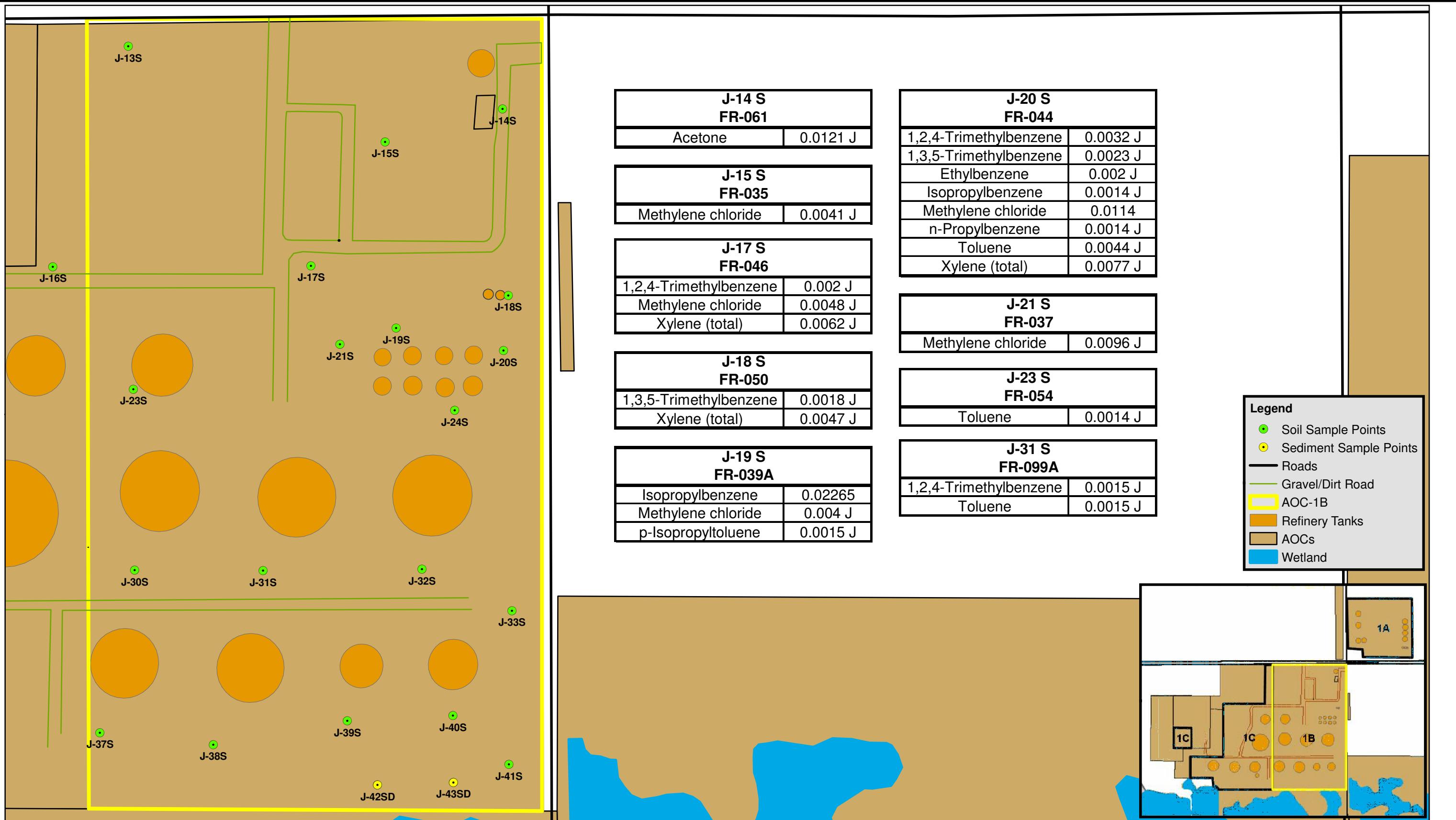
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FIGURE

**21D**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 100 200  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-1B  
Ecological  
VOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

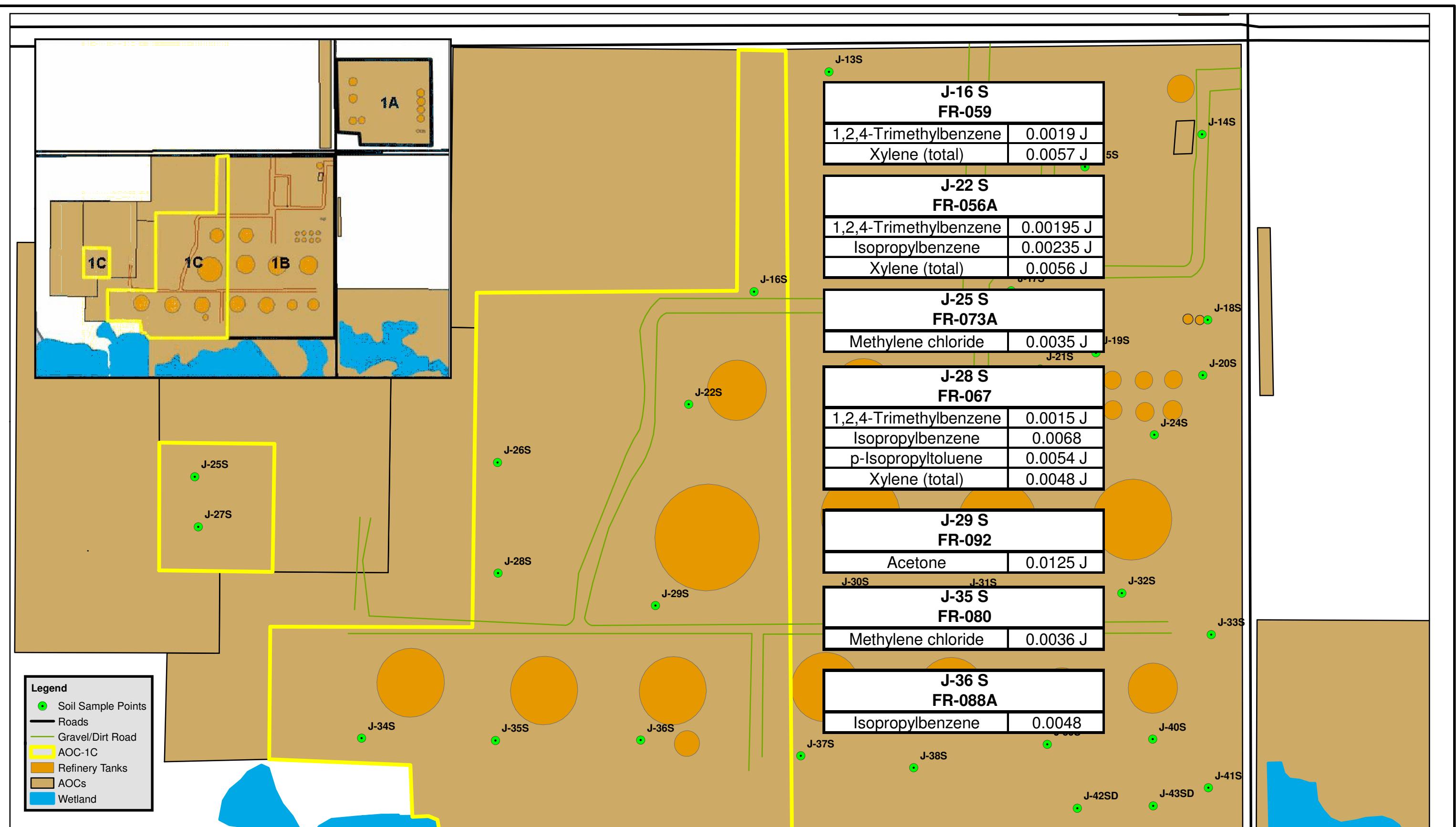
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FIGURE

**21E**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than  
the SDL but less than the method  
quantitation limit (MQL)



0 100 200  
Feet

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APPROVED BY:

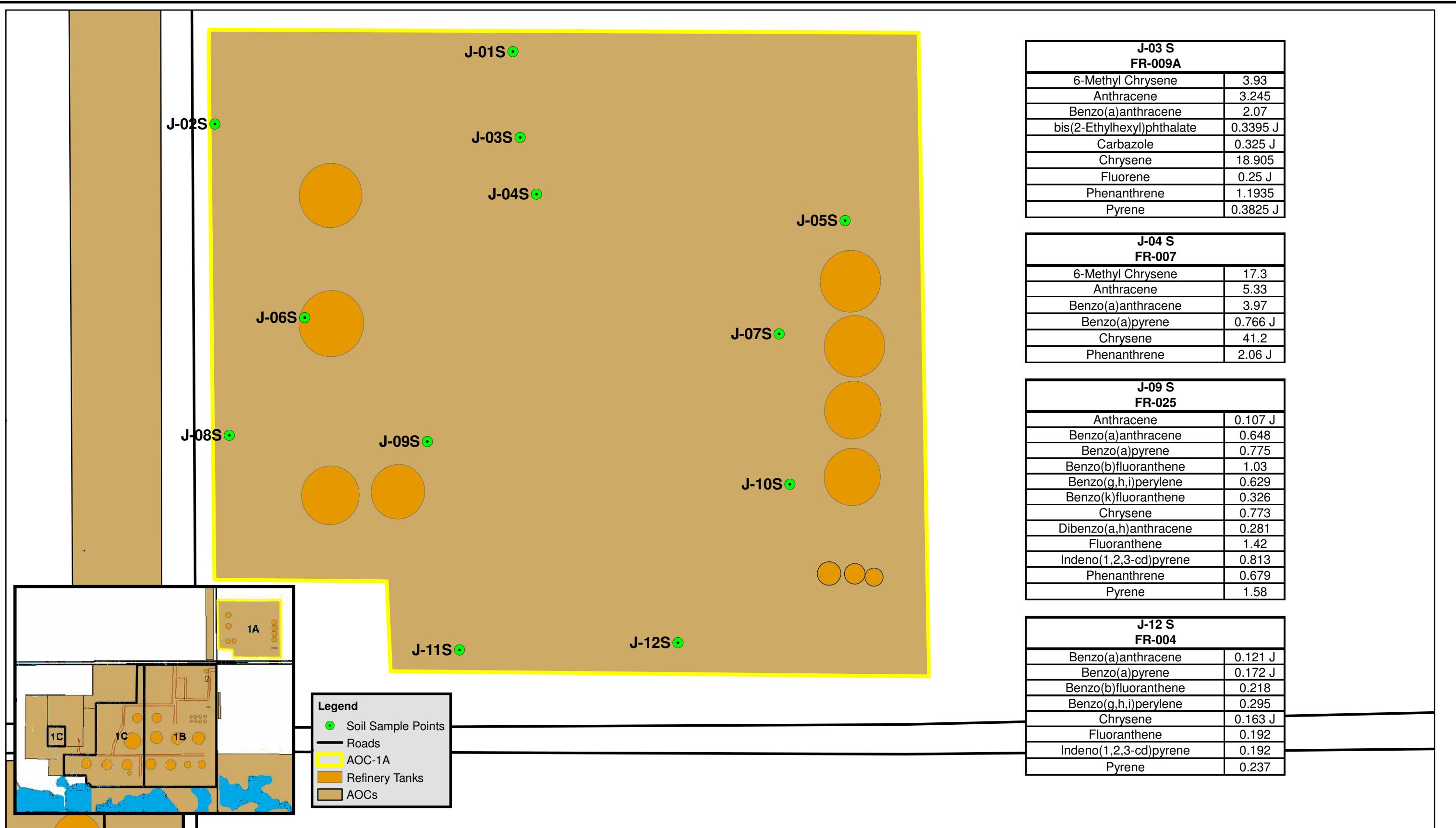
**AOC-1C  
Ecological  
VOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE  
**21F**

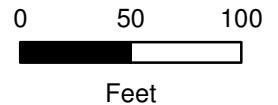


**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



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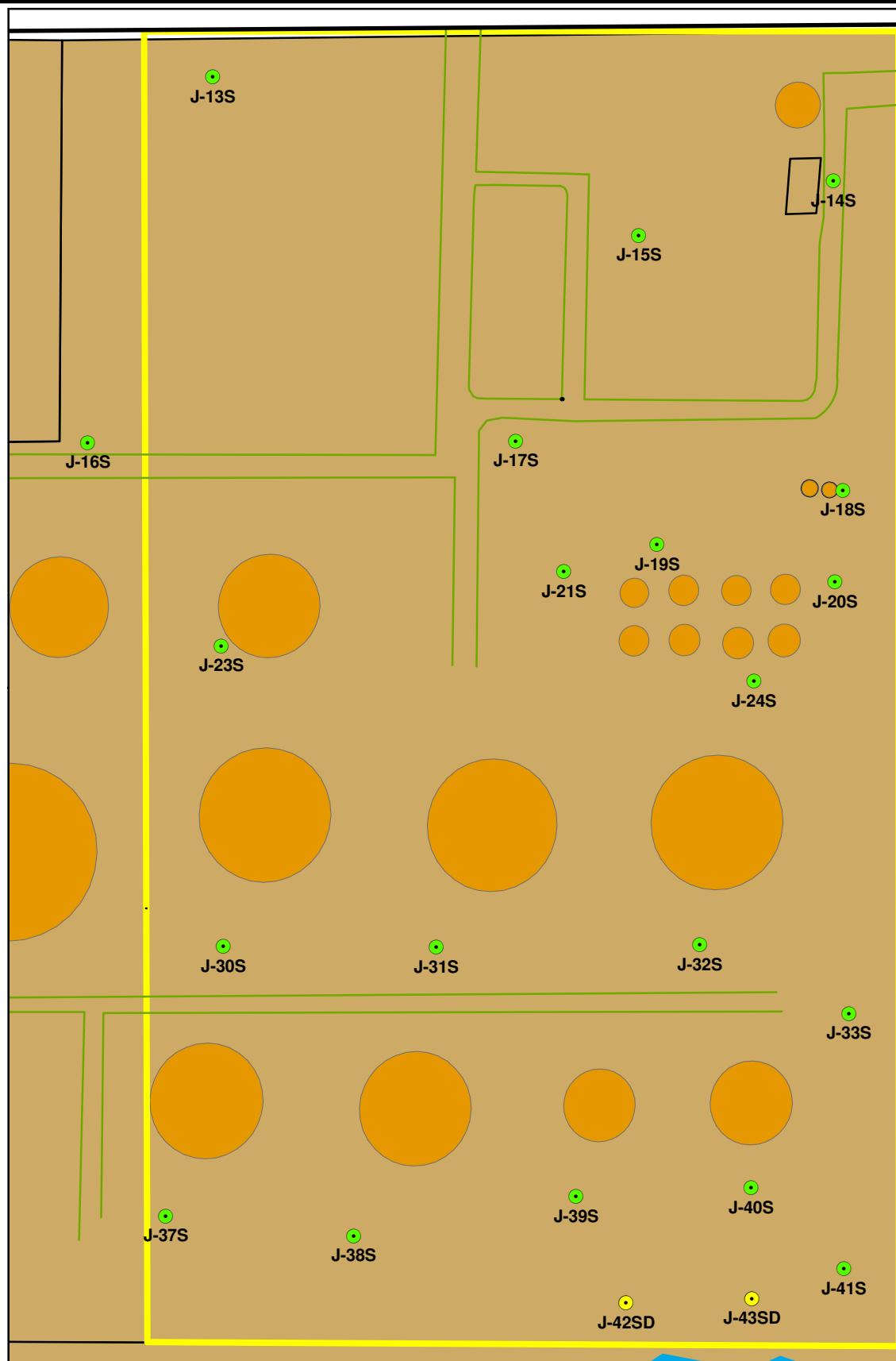
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**AOC-1A  
Ecological  
SVOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 100 200  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-1B  
Ecological  
SVOC Surface Soil Distribution Map**

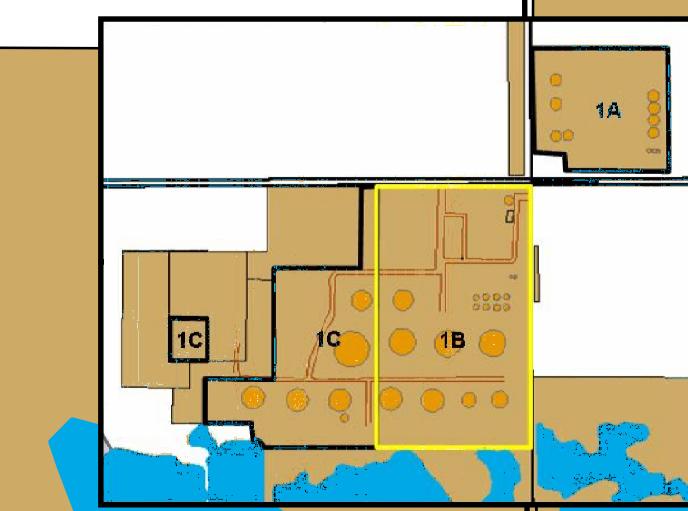
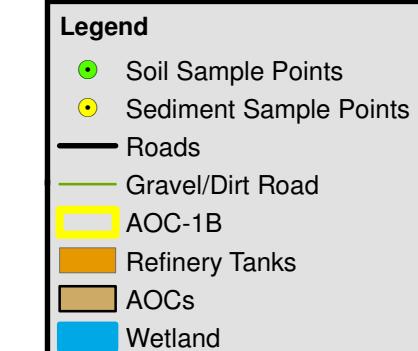
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

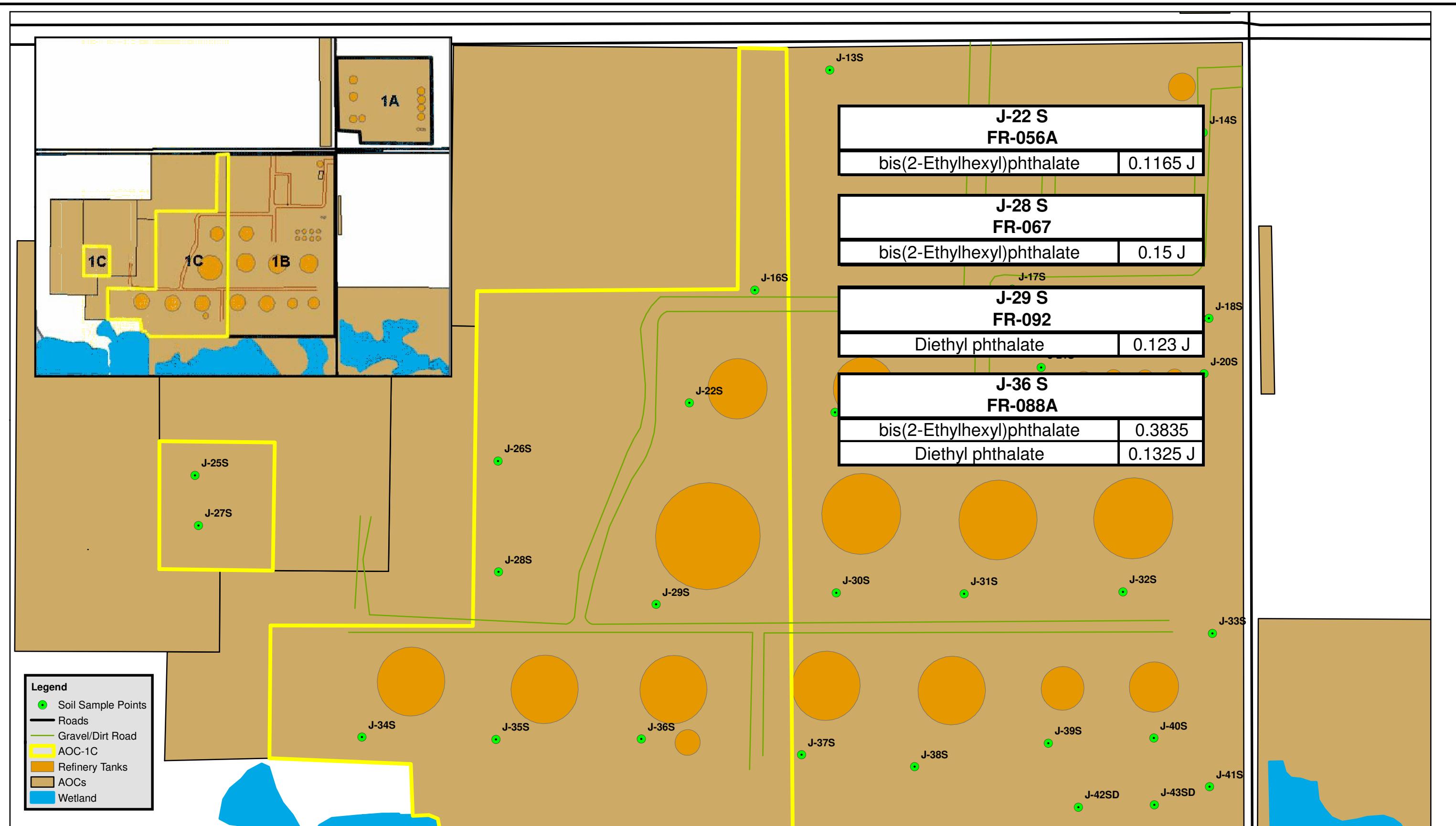
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

<b>J-14 S FR-061</b>	
Benzo(a)anthracene	0.142 J
Benzo(a)pyrene	0.0985 J
Benzo(b)fluoranthene	0.181 J
bis(2-Ethylhexyl)phthalate	0.37
Chrysene	0.164 J
Fluoranthene	0.337
Phenanthrene	0.147 J
Pyrene	0.336

<b>J-15 S FR-035</b>	
Naphthalene	0.175 J

<b>J-33 S FR-105</b>	
Diethyl phthalate	0.0707 J





**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



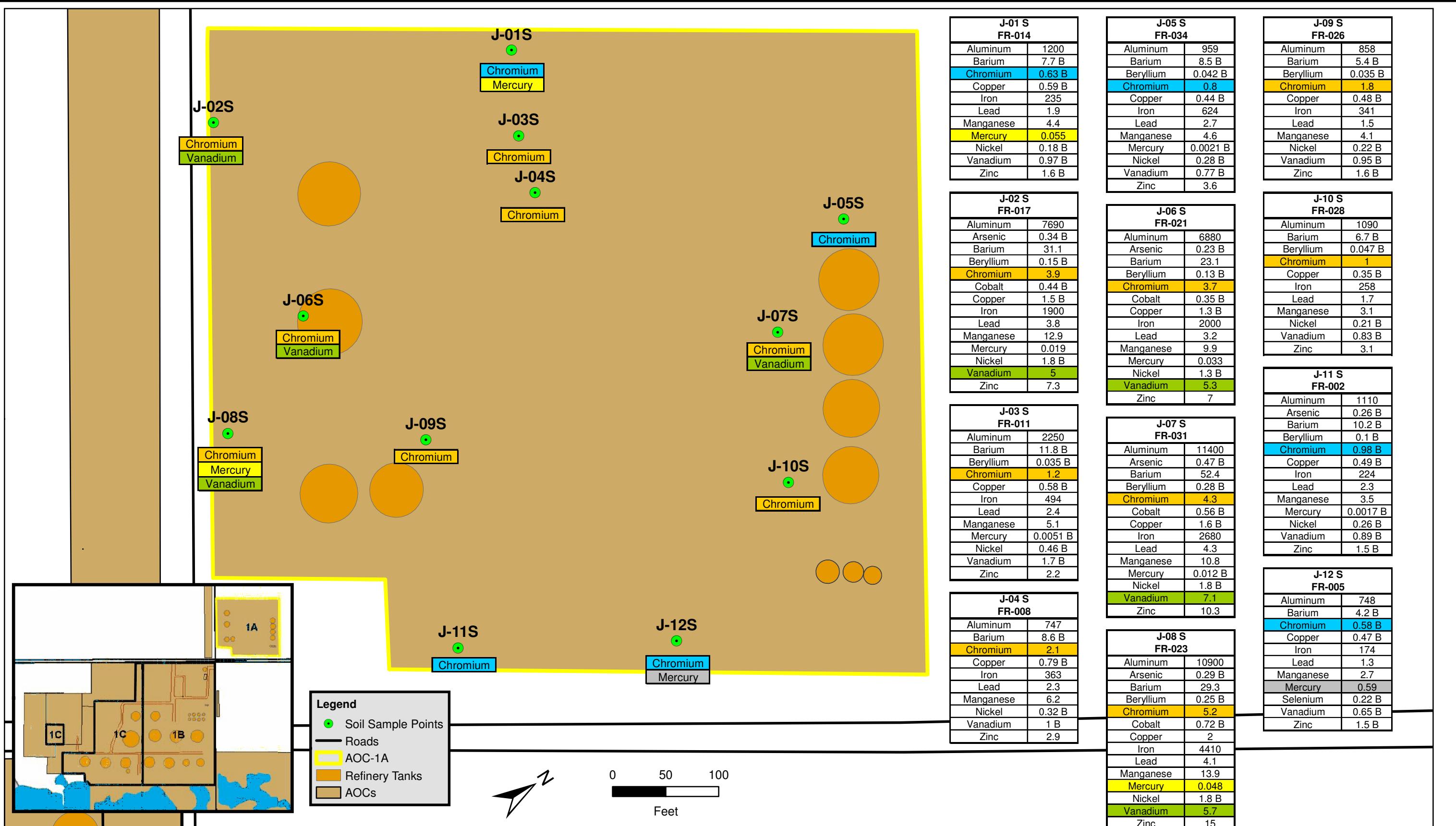
0 100 200  
Feet

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APPROVED BY:	

**AOC-1C Ecological  
SVOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map


**Notes:**

1. Results are posted in mg/kg

Exceeds Earthworm Limit

2. Qualifiers:

Exceeds Plant Limit

Exceeds Median Background Limit

Exceeds Earthworm and Plant Limits

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Earthworm, Plant, and Median Background Limits

DATE DRAWN: 4/30/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

### AOC-1A Ecological Metal Subsurface Soil Distribution Map

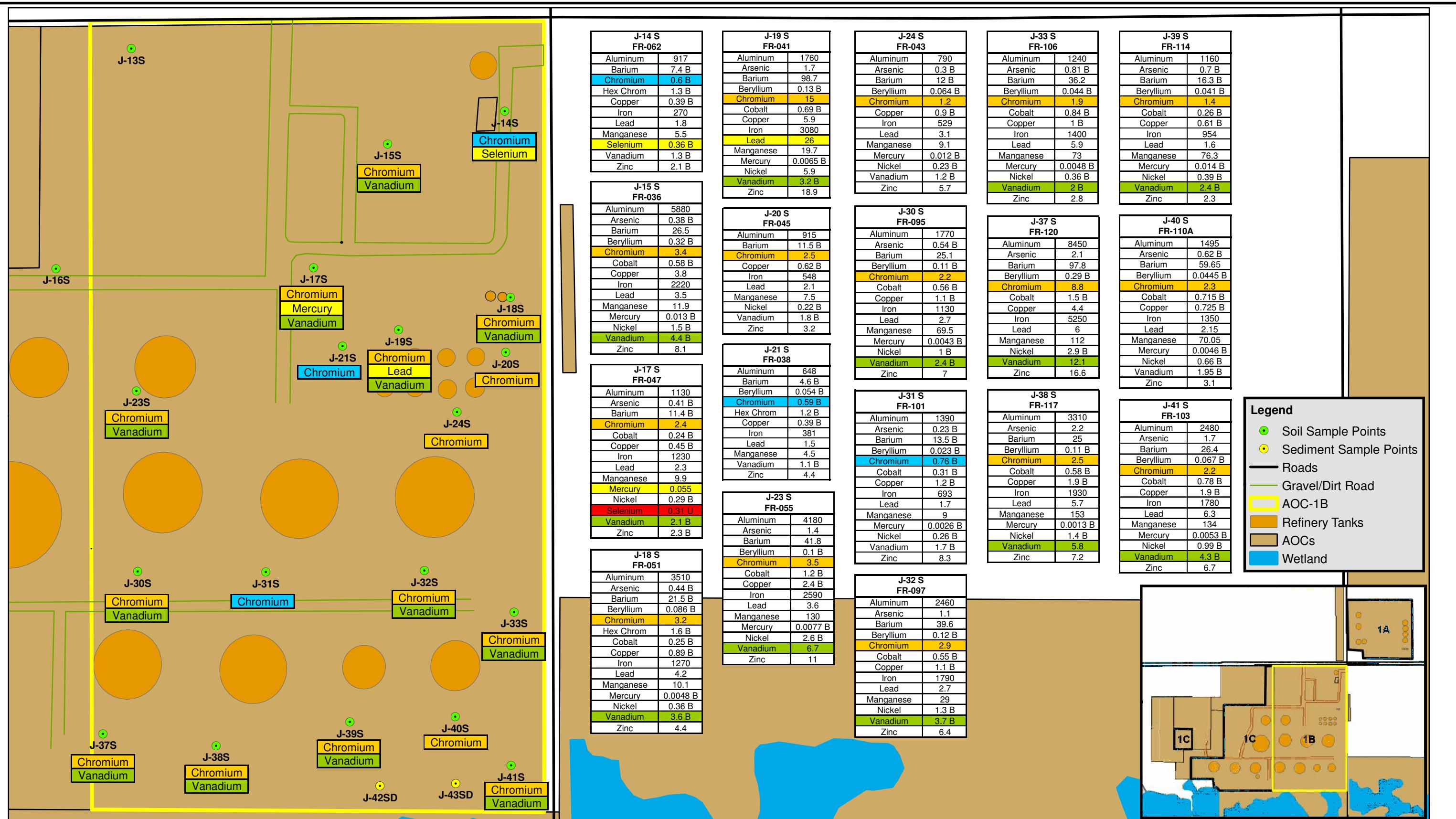
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FIGURE

22A



#### **Notes-**

- 1. Results are posted in mg/kg**

**2. Qualifiers:**

**U = Undetected at the sample detection limit (SDL)**

**B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)**

Exceeds Plant Limit  
Exceeds Median Background Limit  
Exceeds Earthworm and Plant Limits  
SDL Exceeds Median Background Screening Level

0      100      200

Foot

- Exceeds Earthworm Limit
- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits

A scale bar with a diagonal line and a horizontal line above it. The number '0' is at the left end, and '100' is at the right end. Below the bar, the word 'Feet' is written.

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APPROVED BY:	
<hr/>	

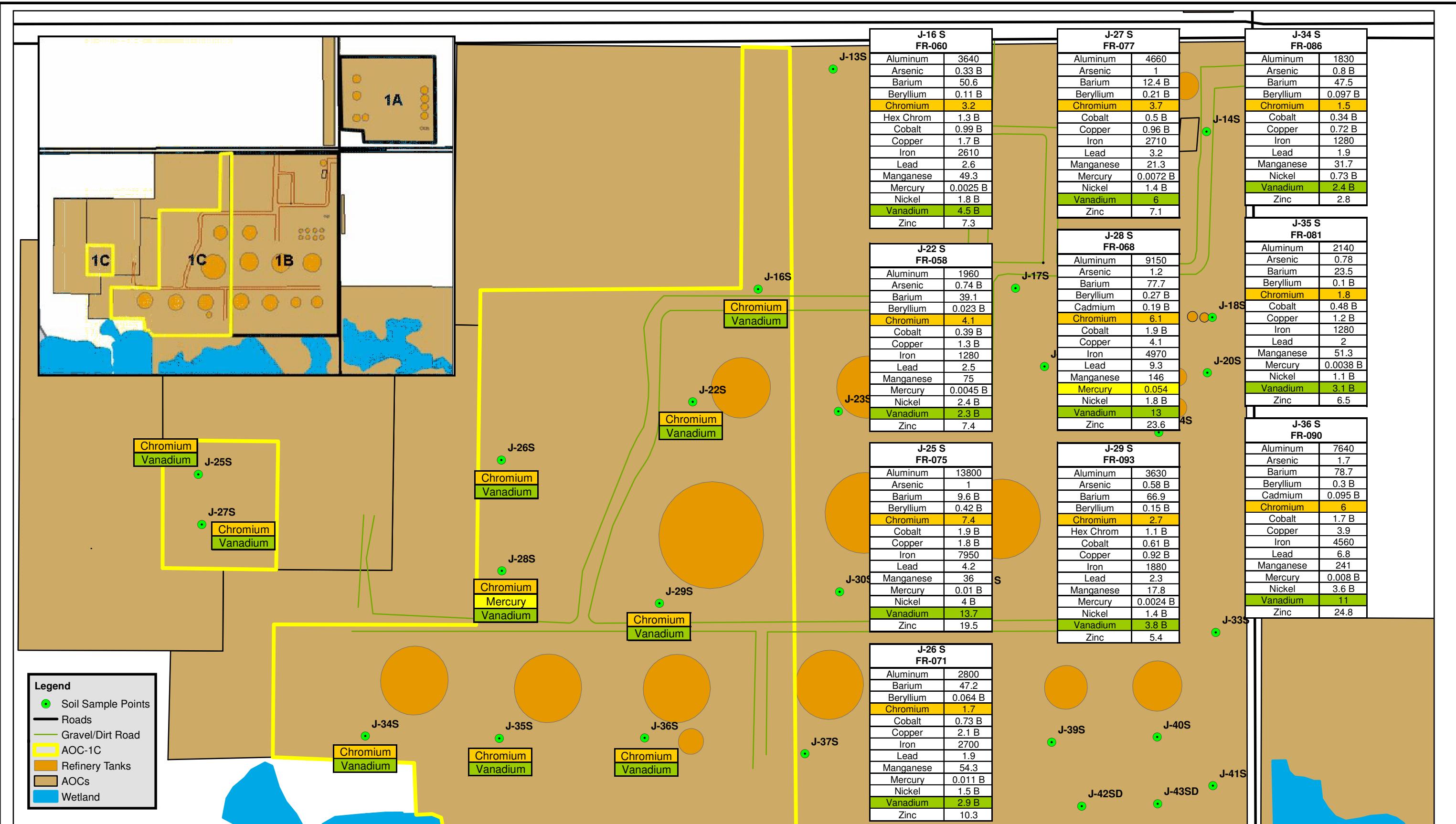
**AOC-1B**  
**Ecological**  
**Metal Subsurface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



# FIGURE **22B**



## Notes:

- |                                       |  |
|---------------------------------------|--|
| <b>1. Results are posted in mg/kg</b> |  Exceeds Plant Limit                |
| <b>2. Qualifiers:</b>                 |  Exceeds Median Background Limit    |
|                                       |  Exceeds Earthworm and Plant Limits |

**B** = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



A scale bar at the top of the page, showing a horizontal line with tick marks at 0, 90, and 180. The segment between 0 and 90 is filled black, while the segments between 90 and 180, and beyond 180, are white.

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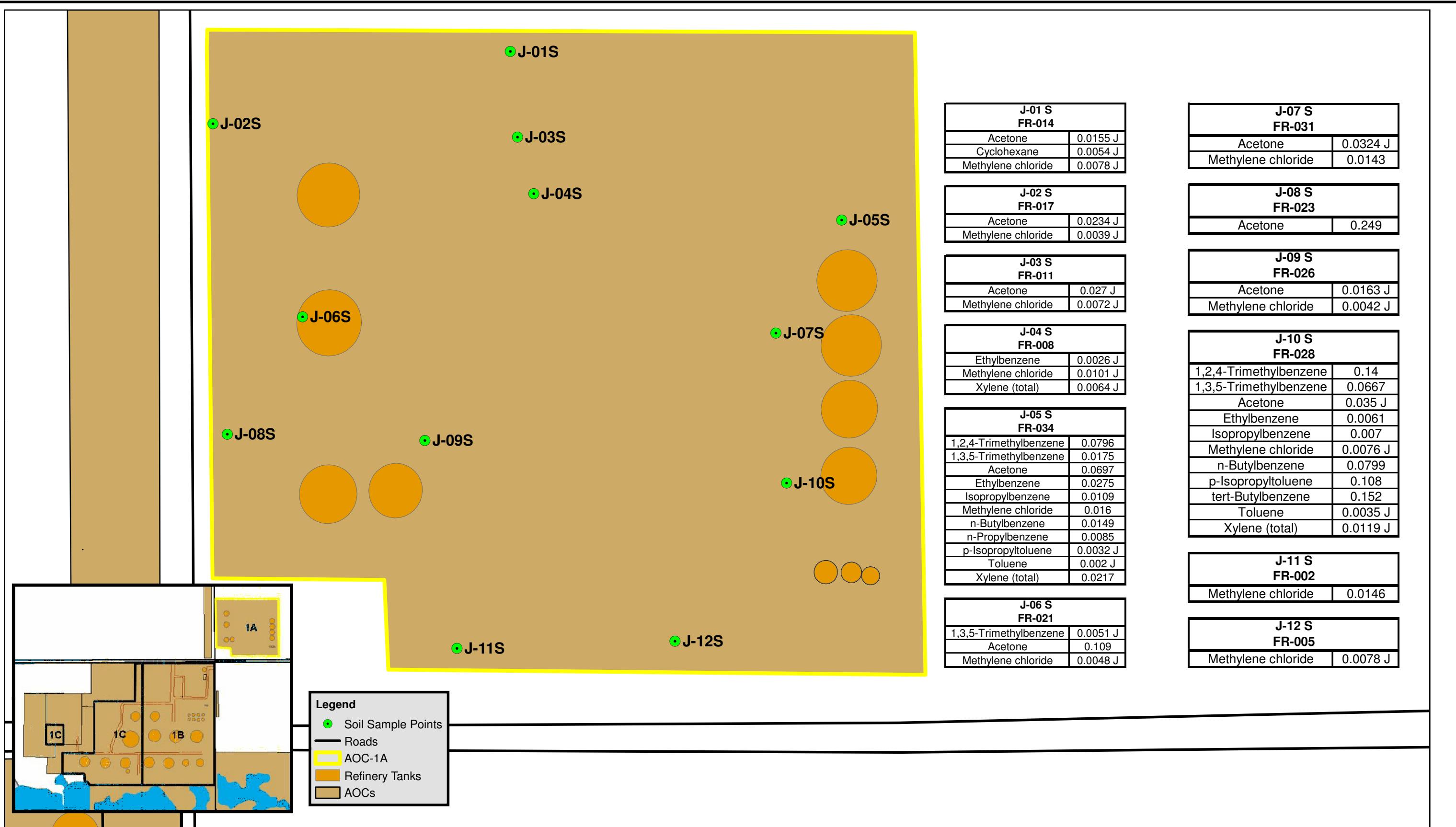
## **AOC-1C Ecological Metal Subsurface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



# FIGURE **22C**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

0 50 100  
Feet



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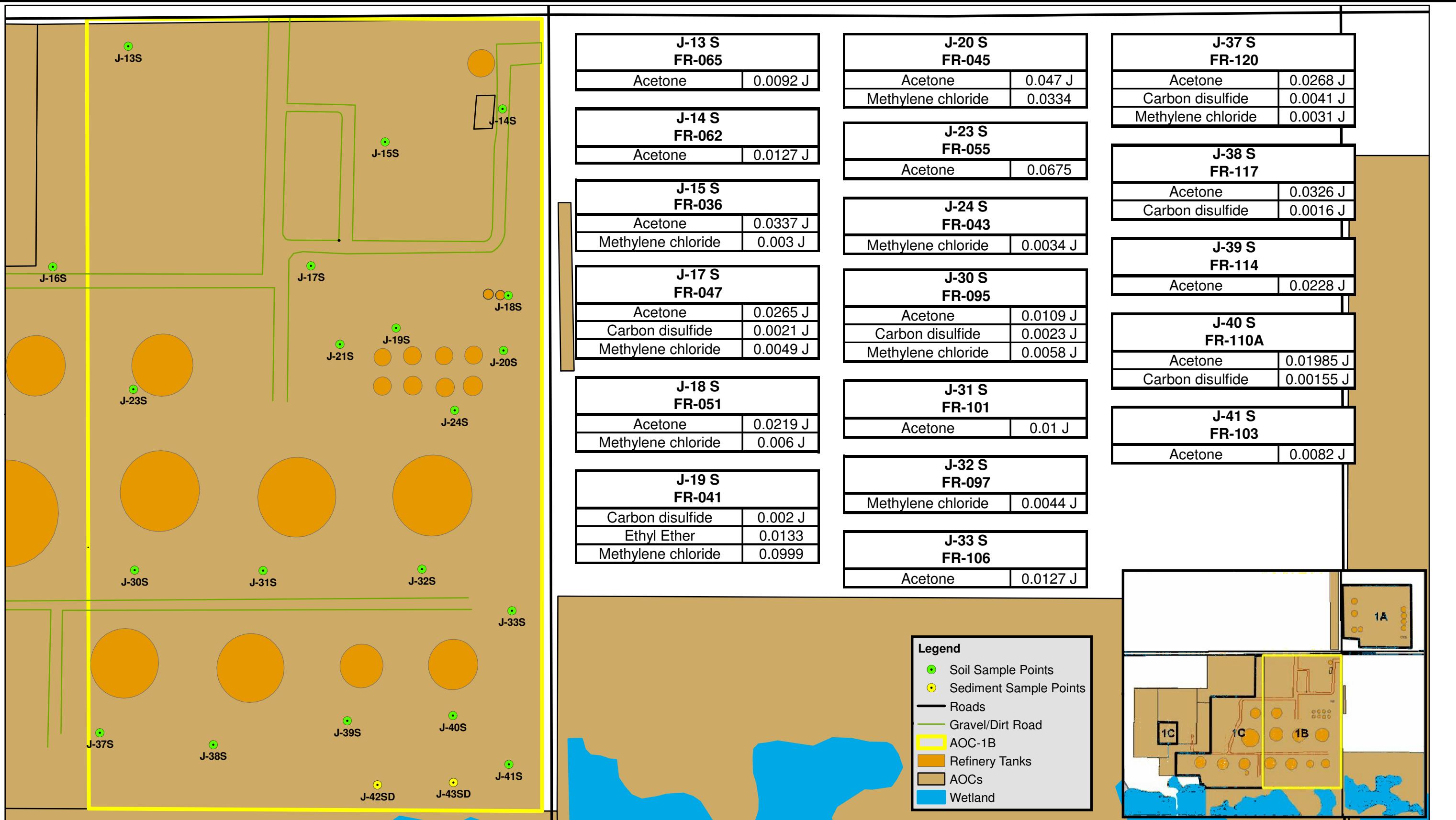
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FALCON REFINERY INGLESIDE, SAN PATRICIO COUNTY, TEXAS	
PROJ NO.	FILE NAME: Falcon Refinery Base Map



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FIGURE

**22D**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than  
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quantitation limit (MQL)



0 100 200  
Feet

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**AOC-1B  
Ecological  
VOC Subsurface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

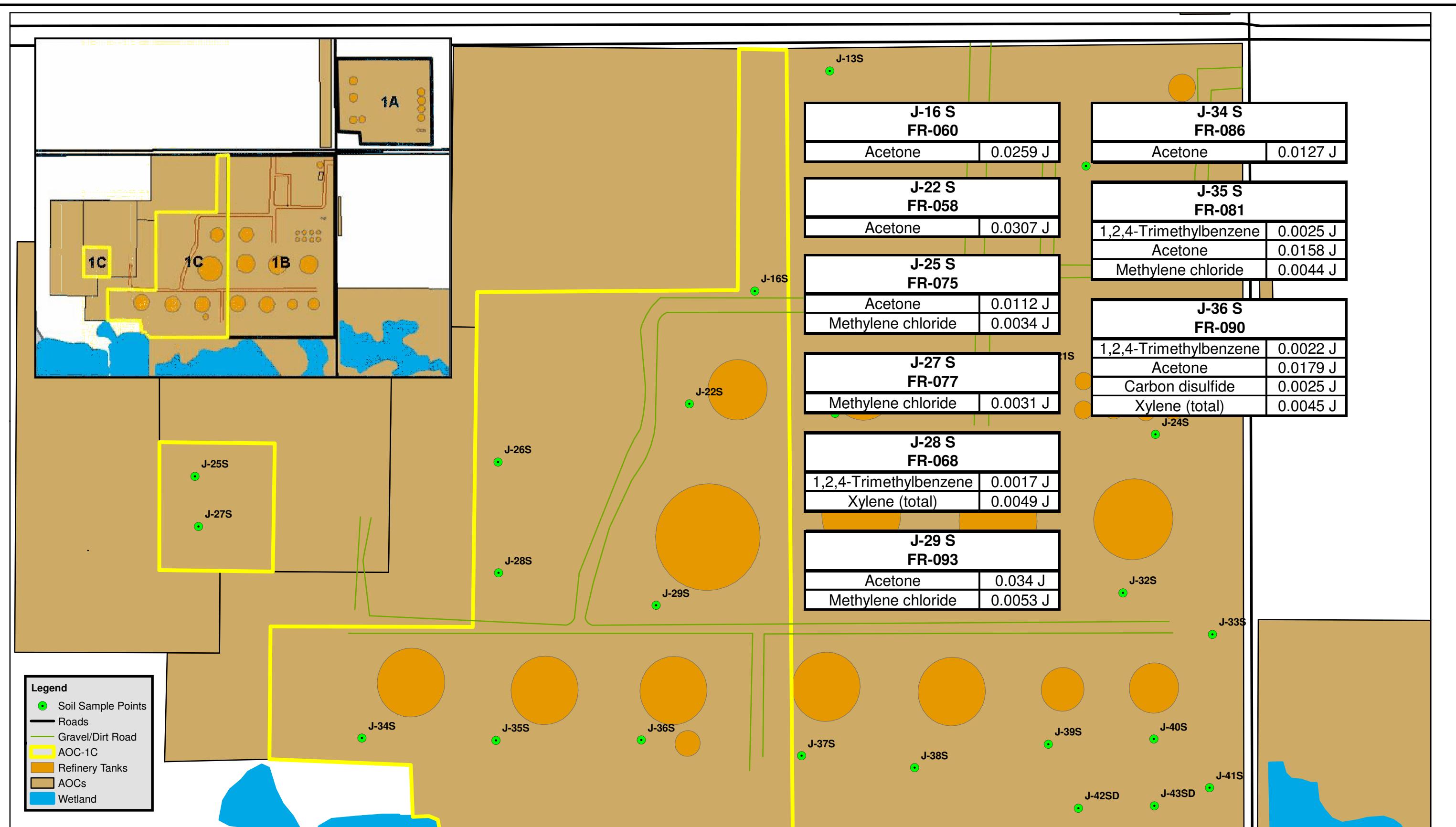
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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FIGURE

**22E**

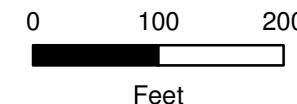


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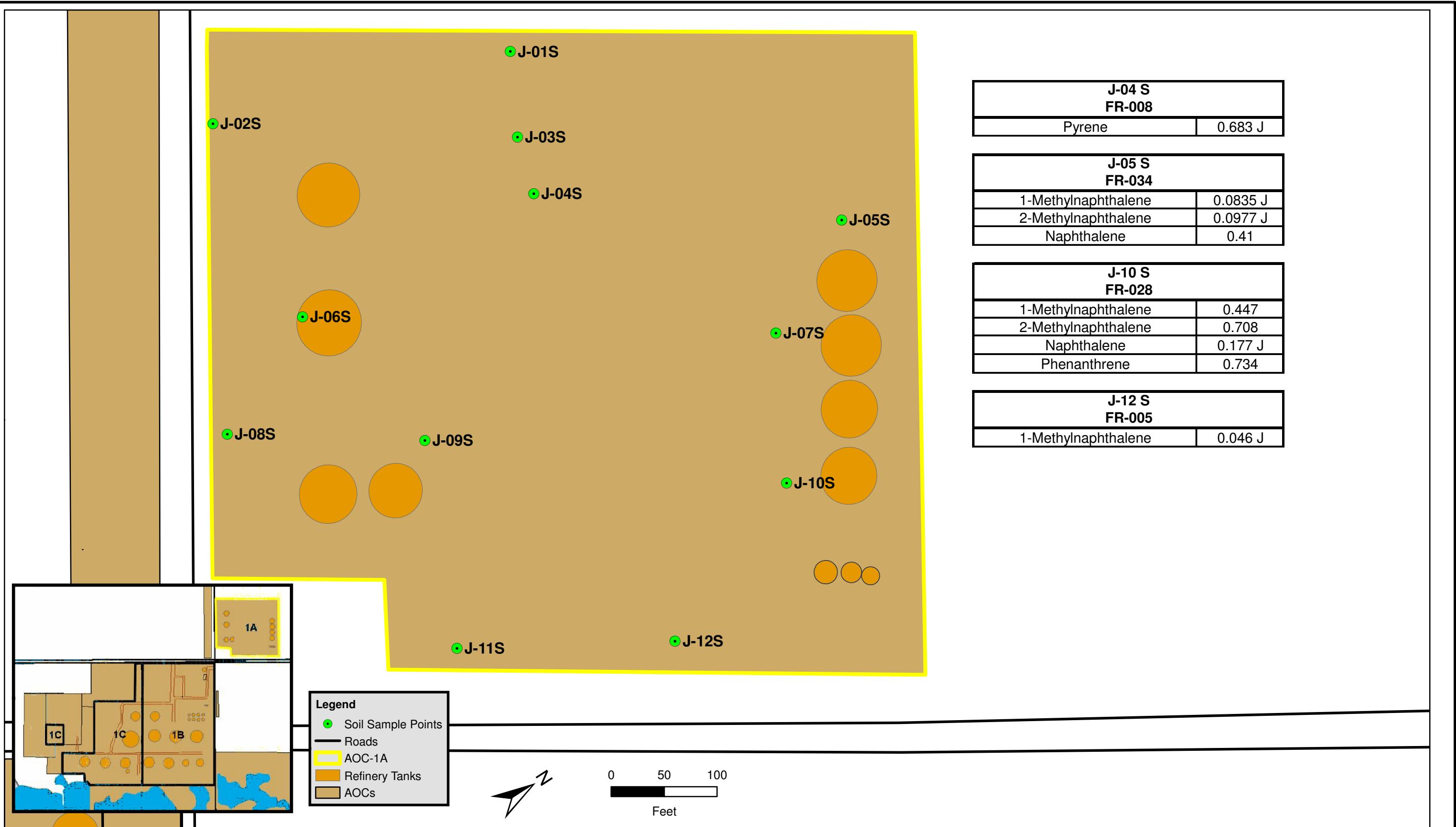
**AOC-1C Ecological VOC Subsurface Soil Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE

**22F**



**Notes:**

1. Results are posted in mg/kg

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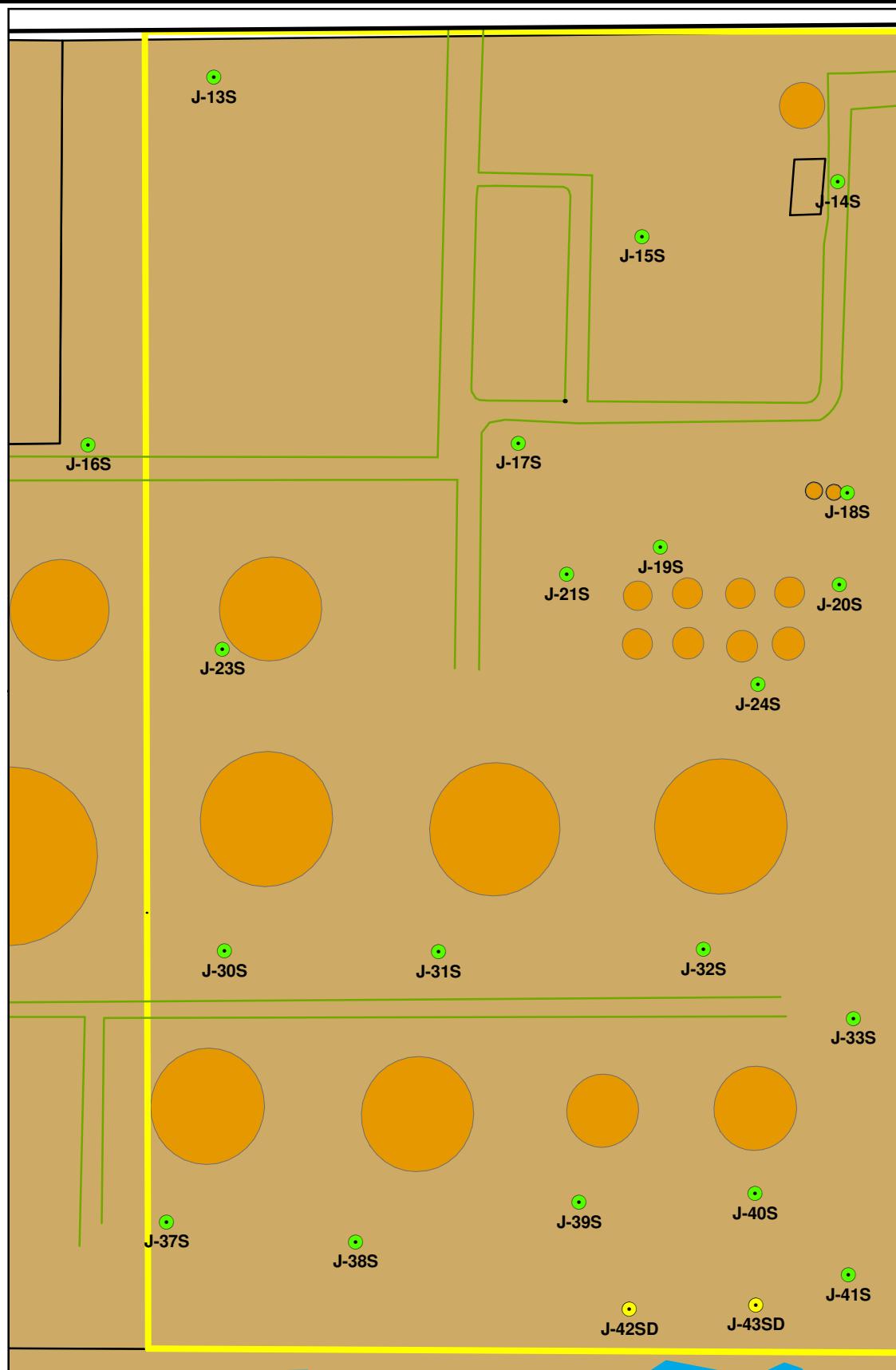
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0 50 100 Feet

North Arrow

**AOC-1A Ecological SVOC Subsurface Soil Distribution Map**

FALCON REFINERY  
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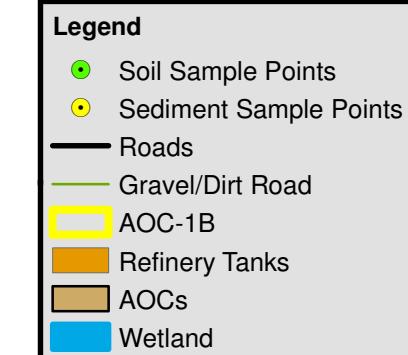


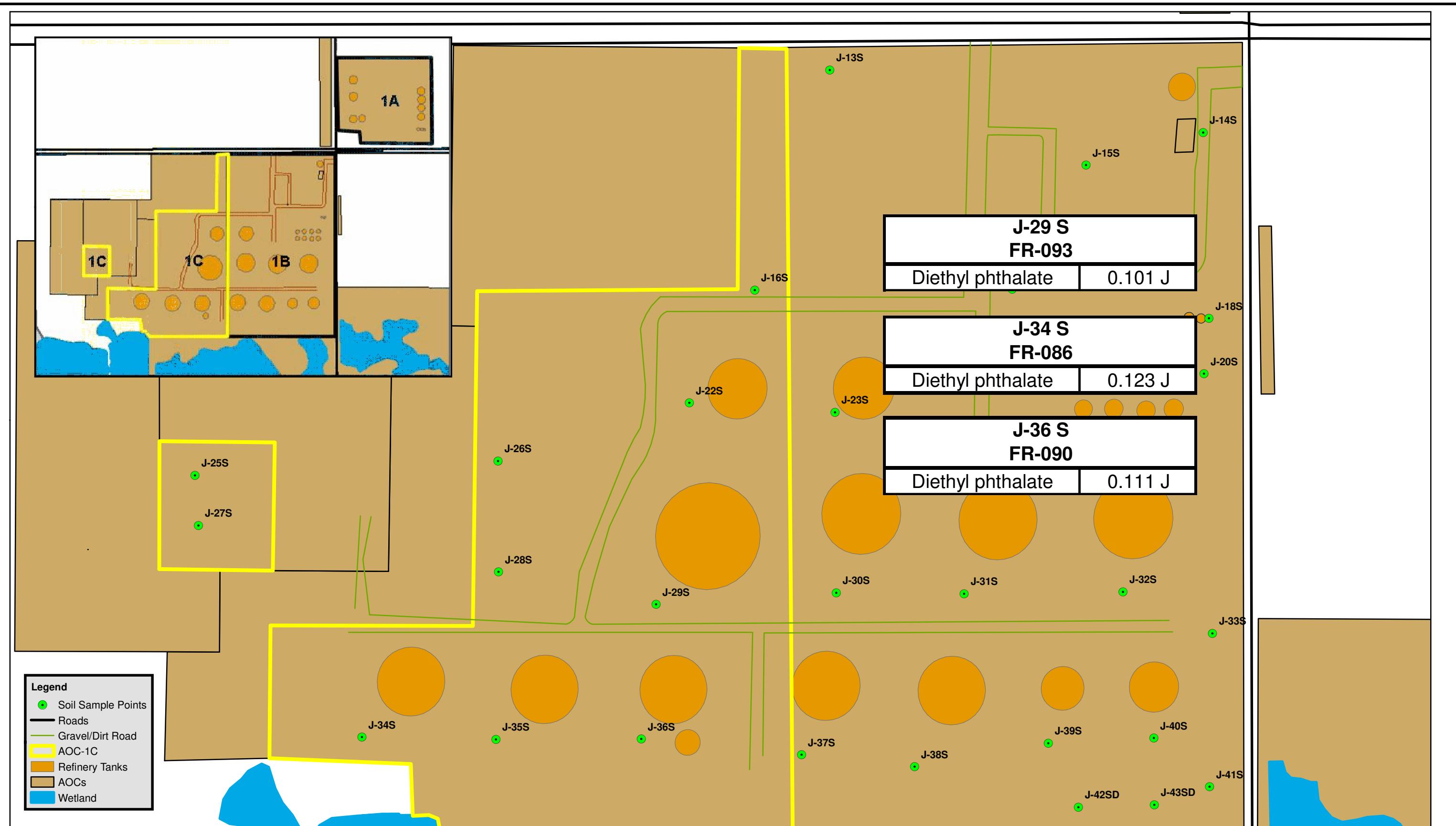
J-19 S FR-041	
1-Methylnaphthalene	0.0507 J
Fluoranthene	0.114 J
Naphthalene	0.157 J

J-23 S FR-055	
Acenaphthene	0.147 J
Anthracene	0.0735 J
Carbazole	0.129 J
Chrysene	0.0901 J
Dibenzofuran	0.0902 J
Fluorene	0.0964 J
Phenanthrene	0.15 J

J-33 S FR-106	
Diethyl phthalate	0.0763 J

J-41S FR-103	
Diethyl phthalate	0.0952 J





**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than  
the SDL but less than the method  
quantitation limit (MQL)



0 100 200  
Feet

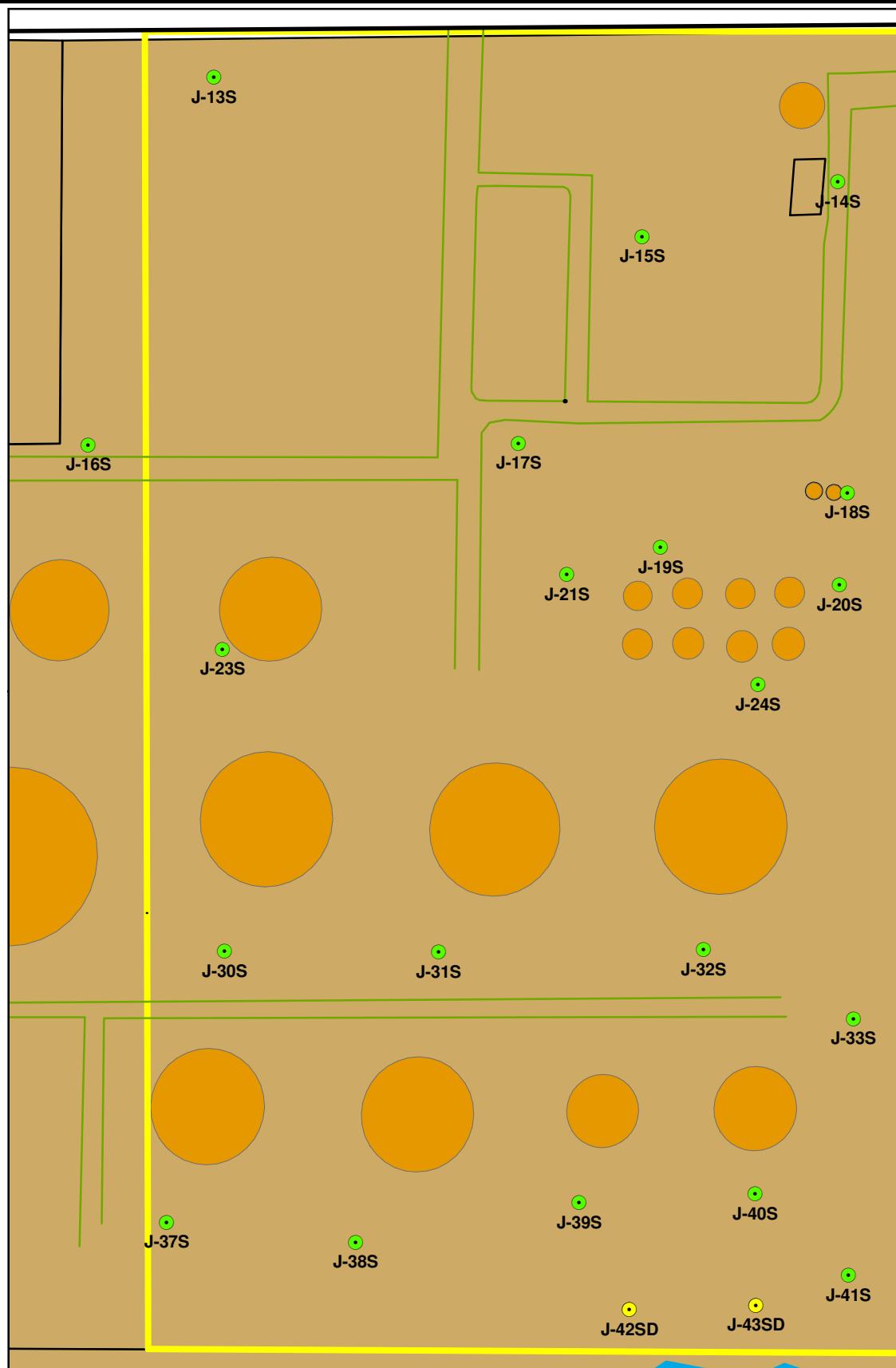
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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-1C Ecological SVOC Subsurface Soil Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE  
**22I**

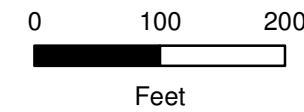


**Notes:**

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DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

### AOC-1B Ecological Metal Sediment Distribution Map

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

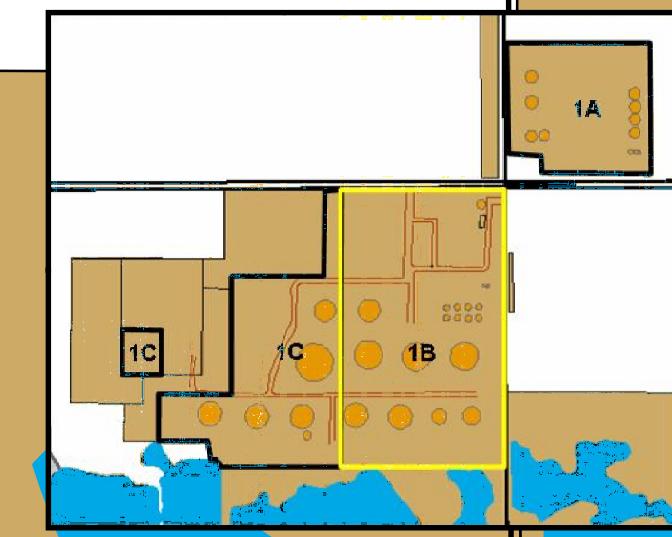
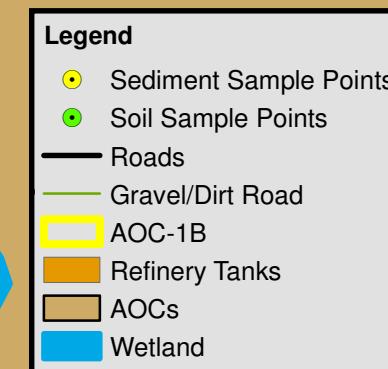
PROJ NO.

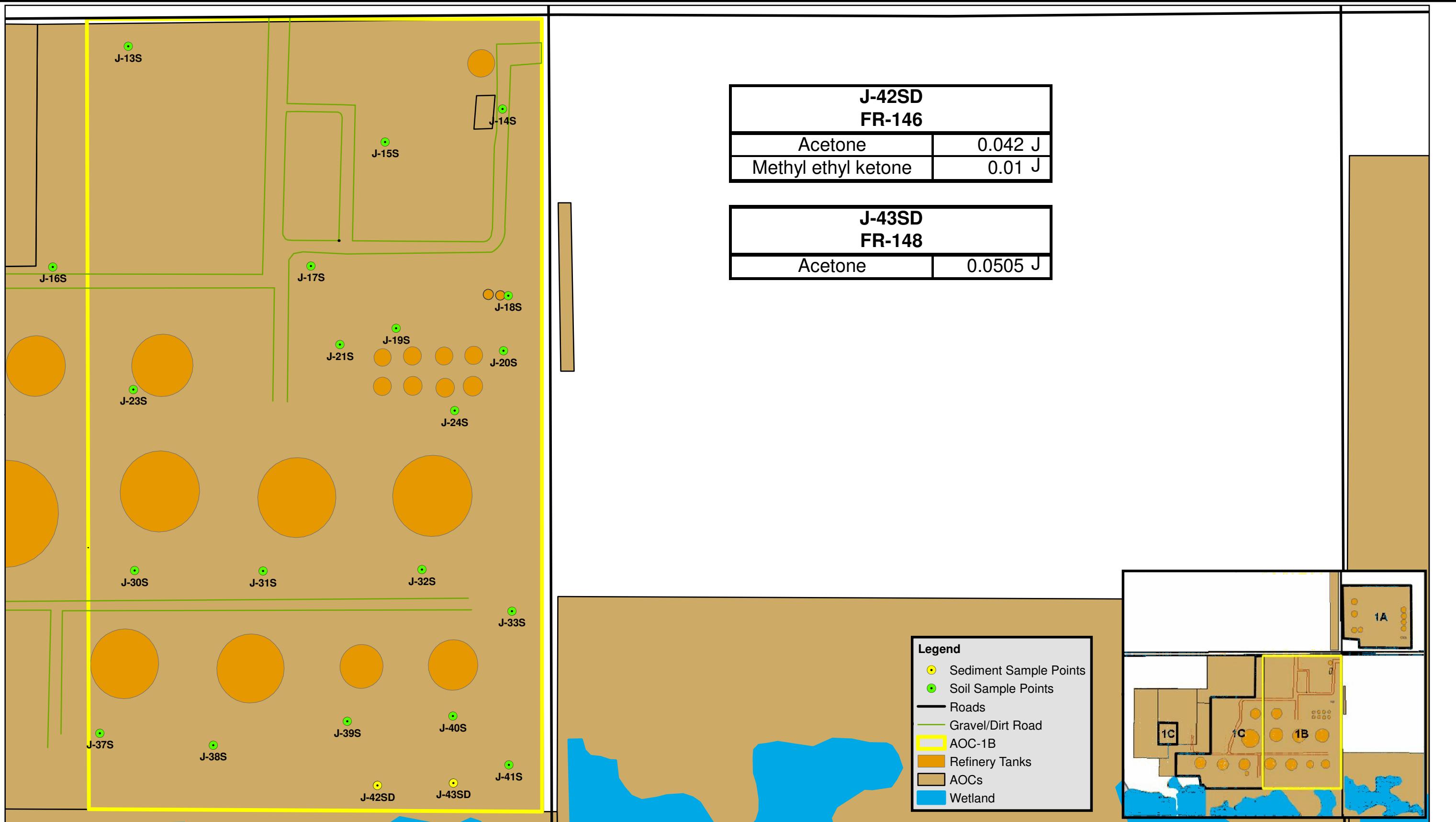
59752

FILE NAME: Falcon Refinery Base Map

J-42SD FR-146	
Aluminum	2030
Arsenic	2.5
Chromium	1.7
Cobalt	0.78 B
Copper	1.7 B
Iron	1750
Manganese	146
Mercury	0.0011 B
Nickel	0.99 B
Vanadium	3.6 B
Zinc	28.1

J-43SD FR-148	
Aluminum	5420
Arsenic	7.2
Barium	129
Chromium	4.9
Cobalt	1.8 B
Copper	5
Iron	3920
Lead	8.3
Manganese	319
Mercury	0.0022 B
Nickel	3.1 B
Vanadium	10.5
Zinc	144





**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 100 200  
Feet

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**AOC-1B  
Ecological  
VOC Sediment Distribution Map**

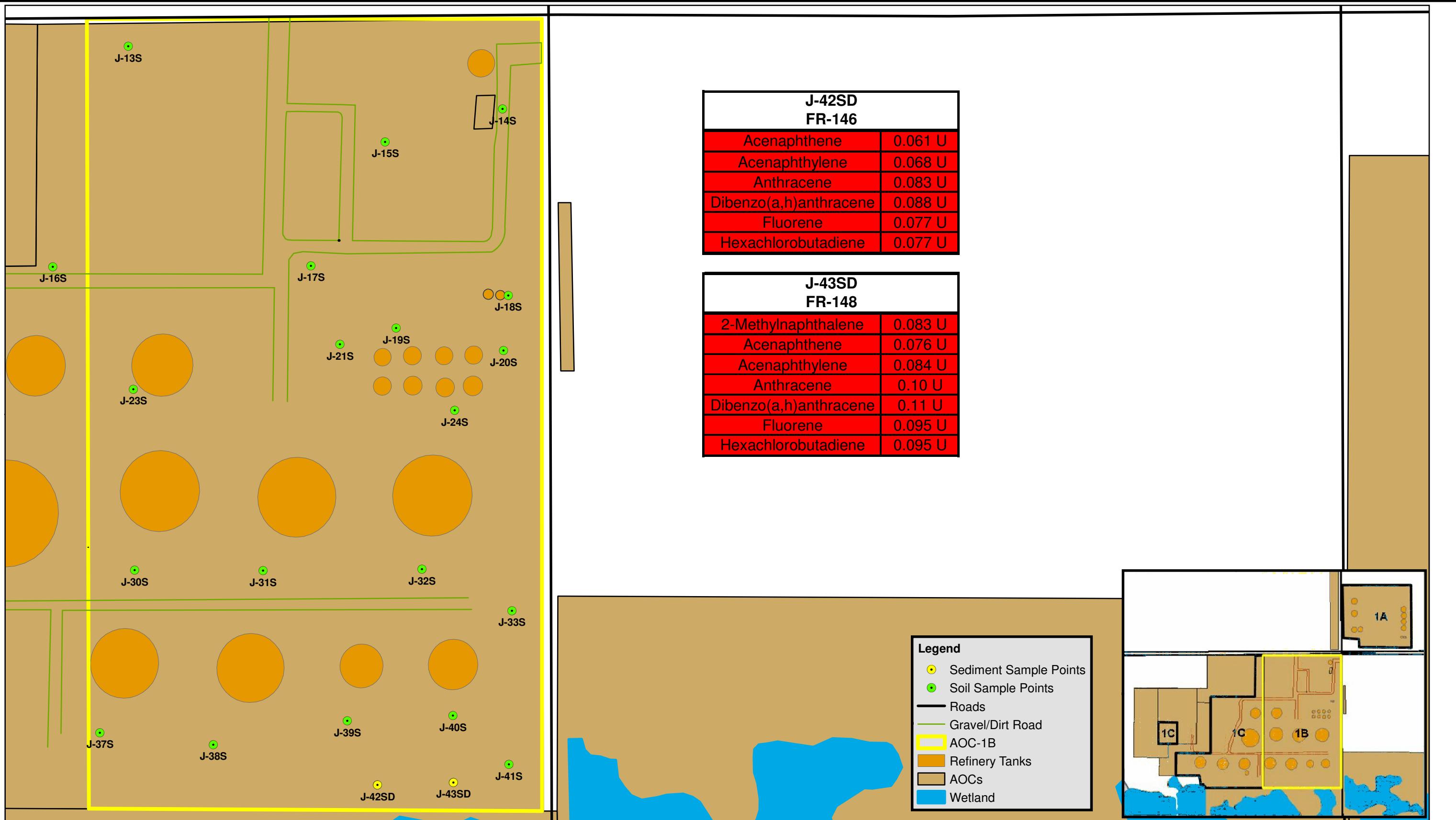
FALCON REFINERY  
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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**FIGURE  
23B**



**Notes:**  
1. Results are posted in mg/kg  
2. Qualifiers:

Exceeds Sediment Marine Screening Level

U = Undetected at the sample detection limit (SDL)



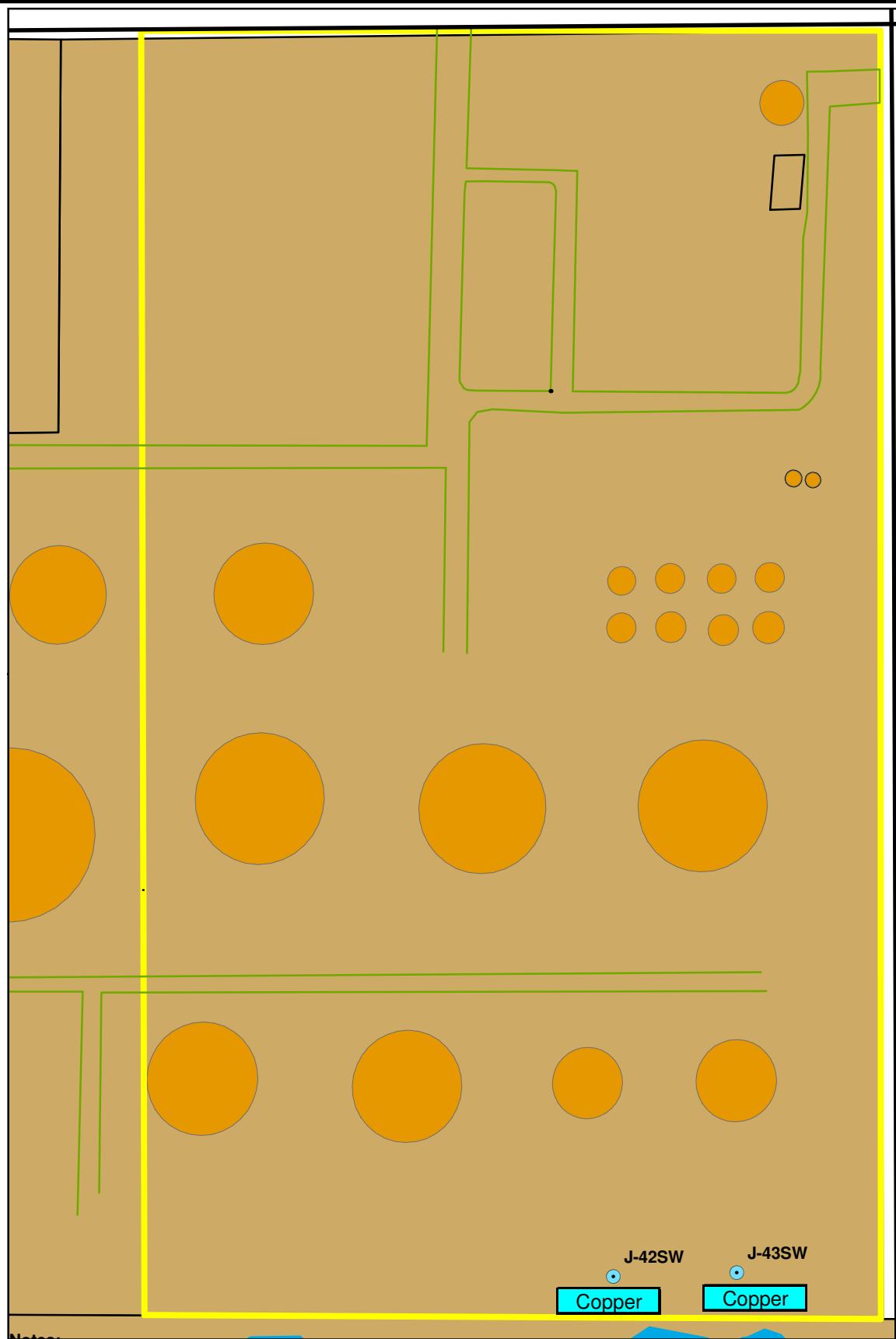
0 90 180  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

### AOC-1B Ecological SVOC Sediment Distribution Map

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in  $\mu\text{g/l}$   
Hex Chrom posted in  $\text{mg/l}$

Above Marine Limit

2. Qualifiers:

Exceeds Marine Screening Level

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



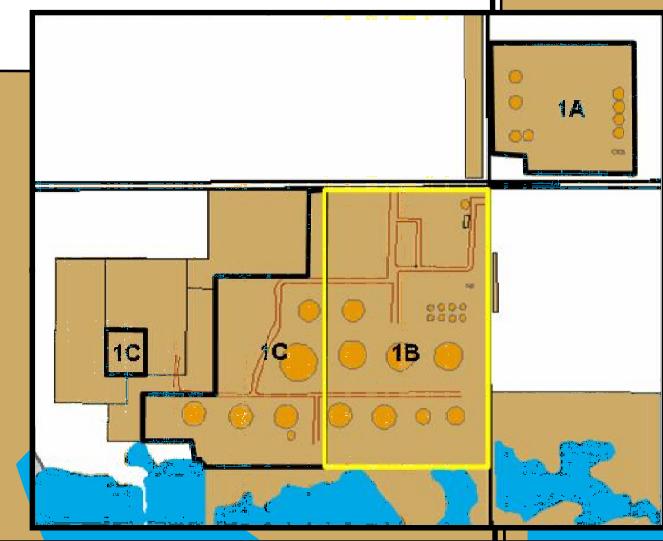
0 90 180  
Feet

J-42 SW FR-145	
Arsenic	8.5
Barium	297
Beryllium	0.27 B
Copper	7.6 B
Iron	33.8 B
Lead	3.4
Manganese	8.2 B
Silver	1.1 U
Thallium	2.9 B
Zinc	20.2

J-43 SD FR-147	
Aluminum	100 B
Antimony	2.9 B
Arsenic	7.6
Barium	342
Hex Chrom	0.007 B
Copper	10.1 B
Iron	184
Manganese	11 B
Silver	1.1 U
Zinc	56

**Legend**

- Surface Water Sample Points
- Roads
- Gravel/Dirt Road
- AOC-1B
- Refinery Tanks
- AOCs
- Wetland



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CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-1B  
Ecological  
Metal Surface Water Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

Composite 1 FR-123	
Aluminum	2680
Barium	33.9
Beryllium	0.11 B
Chromium	1.6
Cobalt	0.37 B
Copper	2.1 B
Iron	1240
Lead	3.3
Manganese	26
Mercury	0.014 B
Nickel	3.2 B
Vanadium	2.5 B
Zinc	20.5

Composite 4 FR-130	
Aluminum	867
Barium	138
Beryllium	0.056 B
Chromium	1.5
Copper	2 B
Iron	907
Lead	3.7
Manganese	18.8
Mercury	0.011 B
Nickel	0.33 B
Vanadium	1.2 B
Zinc	19.4

Composite 2 FR-128	
Aluminum	4240
Arsenic	0.86 B
Barium	127
Beryllium	0.16 B
Chromium	3.8
Cobalt	1.1 B
Copper	3.8
Iron	3260
Lead	8.6
Manganese	119
Mercury	0.016 B
Nickel	1.9 B
Vanadium	5.2
Zinc	66.5

Composite 3 FR-125	
Aluminum	4430
Arsenic	0.6 B
Barium	25.7
Beryllium	0.2 B
Chromium	4.3
Cobalt	1.2 B
Copper	2.5
Iron	3300
Lead	3.3
Manganese	71.8
Mercury	0.00086 B
Nickel	0.35 B
Vanadium	4.3 B
Zinc	8.3

**Notes:**

1. Results are posted in mg/kg

Exceeds Plant Limit

Exceeds Median Background Limit

Exceeds Earthworm and Plant Limits

2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 100 200  
Feet

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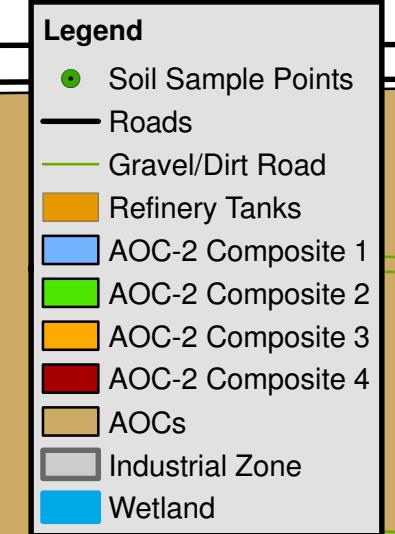
**AOC-2 Ecological Metal Surface Soil Distribution Map**  
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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FIGURE

**25A**

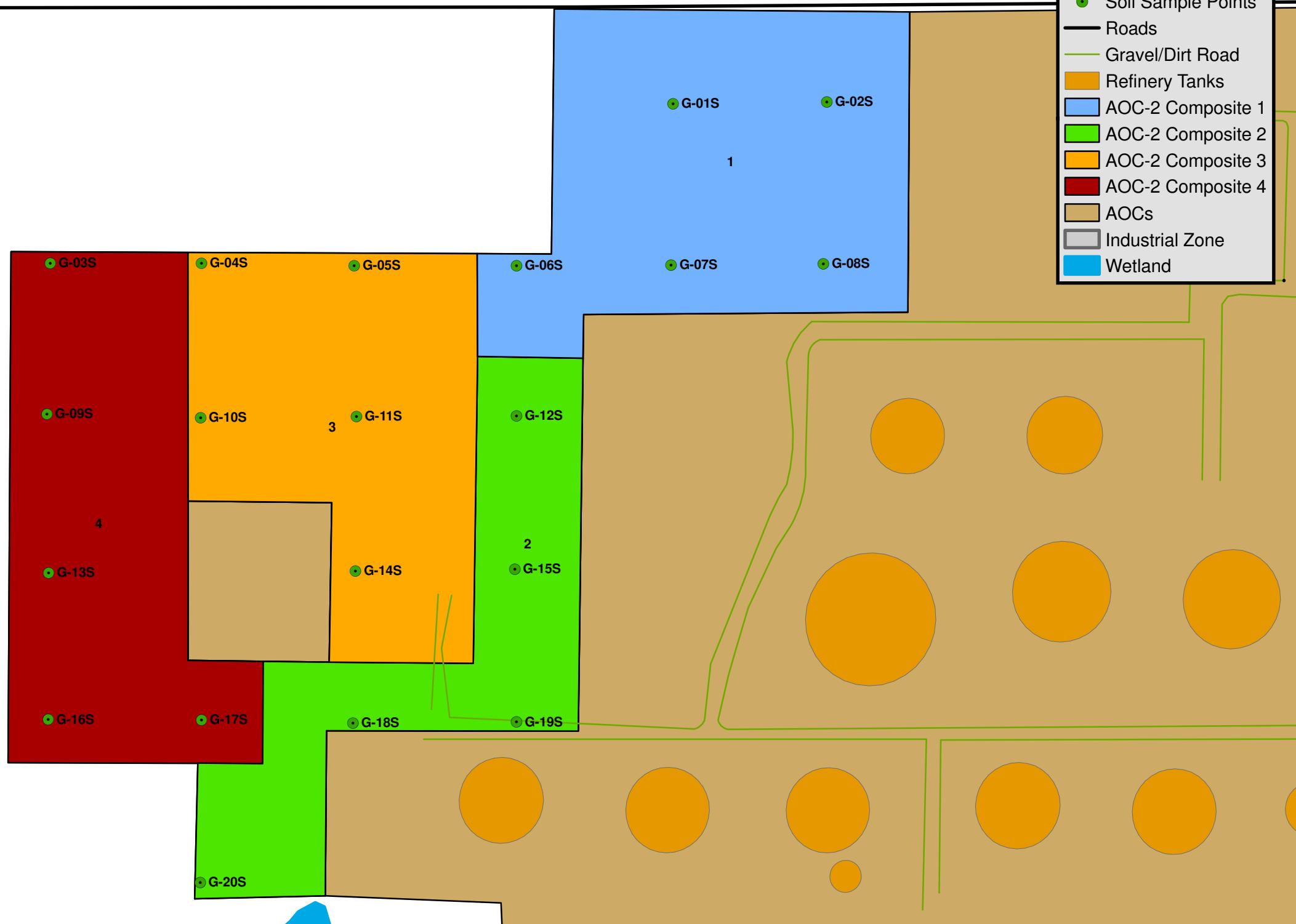


**Composite 2  
FR-128**

Methylene Chloride	0.0048 J
--------------------	----------

**Composite 4  
FR-130**

Acetone	0.0136 J
Methylene Chloride	0.0076 J



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SLD but less than the method quantitation limit (MQL)



0 100 200  
Feet

DATE DRAWN:	DATE REVISED:
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CHECKED BY:	S. HALASZ
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APPROVED BY:	
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**AOC-2  
Ecological  
VOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO.	59752	FILE NAME:	Falcon Refinery Base Map
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Composite 1 FR-124	
Aluminum	1430
Barium	49.4
Beryllium	0.076 B
Chromium	1.6
Cobalt	0.27 B
Copper	1.9 B
Iron	985
Lead	2.9
Manganese	51.8
Mercury	0.016 B
Nickel	1.4 B
Vanadium	1.6 B
Zinc	47.8

Composite 4 FR-131	
Aluminum	1380
Arsenic	0.44 B
Barium	9.6 B
Beryllium	0.074 B
Chromium	1.6
Copper	1.1 B
Iron	1020
Lead	1.5
Manganese	6.1
Mercury	0.0048 B
Nickel	0.27 B
Vanadium	2.2 B
Zinc	3

Composite 2 FR-129	
Aluminum	2680
Arsenic	1.6
Barium	64.1
Beryllium	0.14 B
Chromium	3
Cobalt	0.95 B
Copper	1.8 B
Iron	2690
Lead	2.5
Manganese	186
Mercury	0.0044 B
Nickel	1.6 B
Vanadium	5.2 B
Zinc	7.6

Composite 3 FR-126	
Aluminum	2130
Barium	14.4 B
Beryllium	0.15 B
Chromium	2.1
Hex Chrom	1.7 B
Cobalt	0.87 B
Copper	1.9 B
Iron	1680
Lead	2
Manganese	64.3
Mercury	0.0055 B
Nickel	0.94 B
Vanadium	3.1 B
Zinc	5.4

Notes:

1. Results are posted in mg/kg

- [Green Box] Exceeds Plant Limit
- [Yellow Box] Exceeds Median Background Limit
- [Orange Box] Exceeds Earthworm and Plant Limits

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 90 180  
Feet

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APPROVED BY:	

**AOC-2 Ecological Metal Subsurface Soil Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO.	59752	FILE NAME:	Falcon Refinery Base Map
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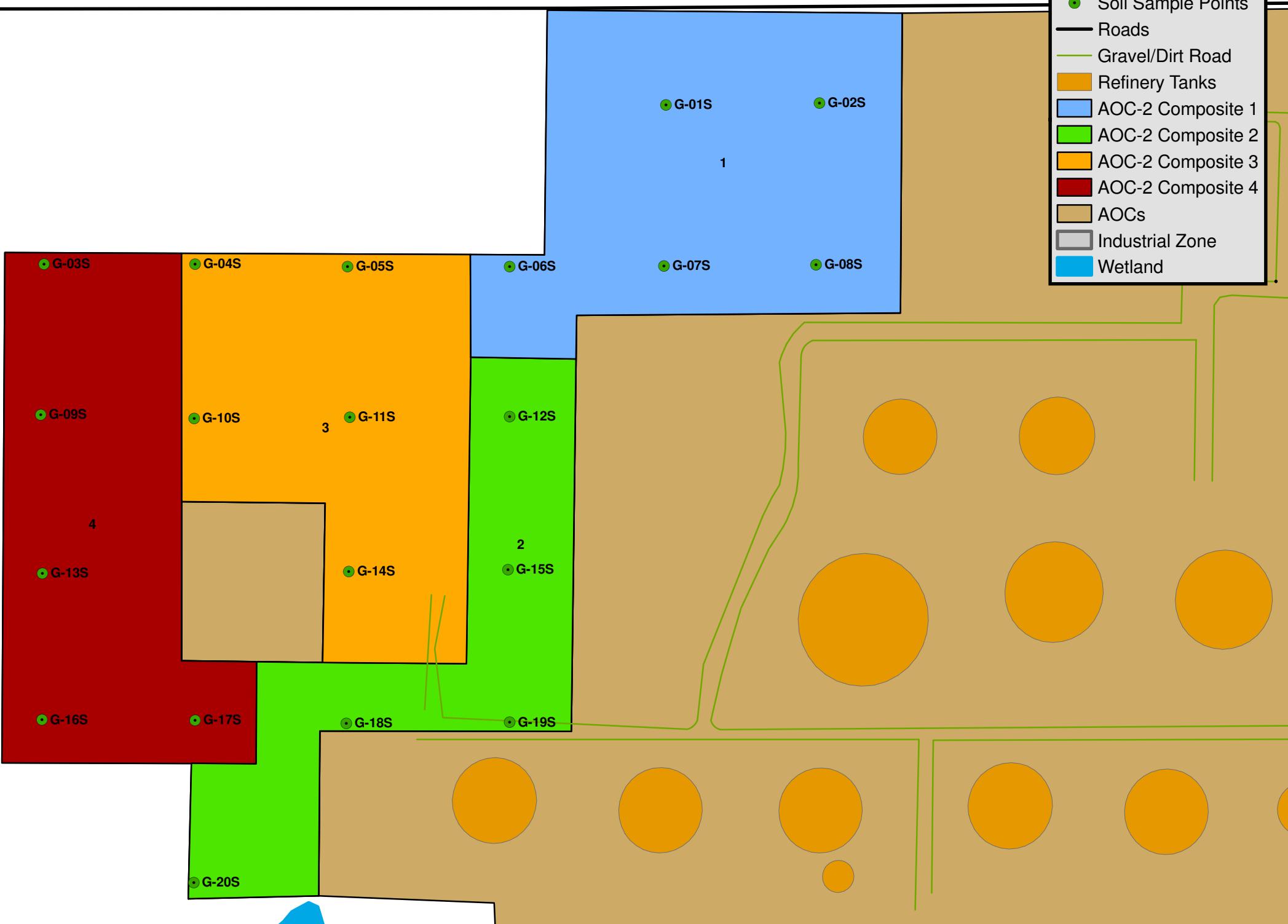
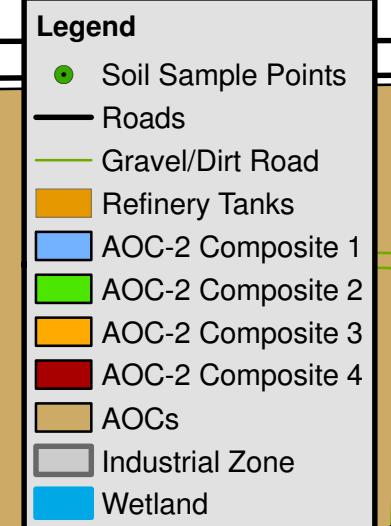
FIGURE  
**26A**

Composite 1	
FR-124	
Acetone	0.0298 J

Composite 2	
FR-129	
Acetone	0.0256 J
Methylene Chloride	0.0066 J

Composite 3	
FR-126	
Acetone	0.011 J

Composite 4	
FR-131	
Acetone	0.0202 J
Methylene Chloride	0.0062 J



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

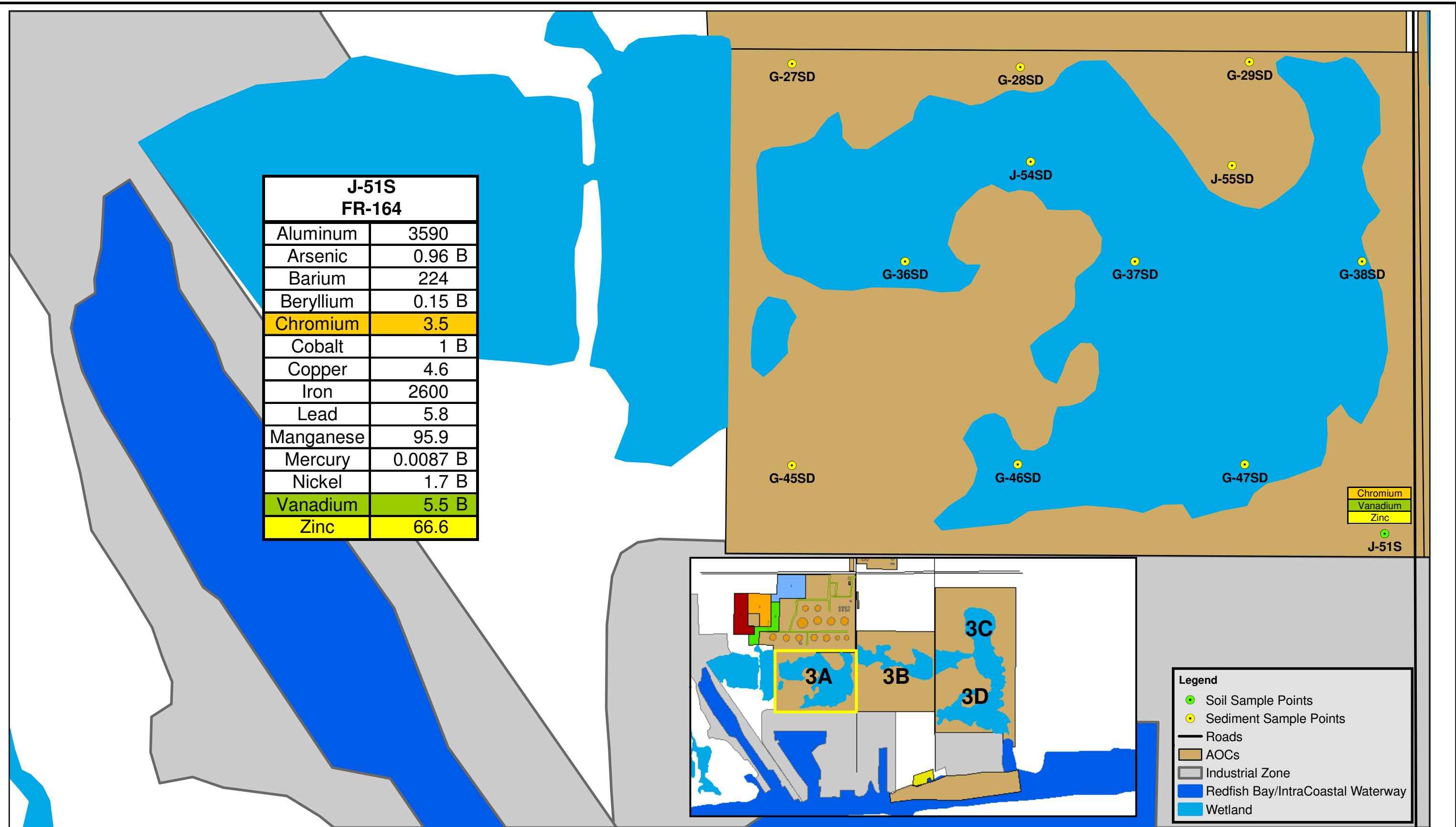
J = Concentration greater than the SLD but less than the method quantitation limit (MQL)



0 100 200  
Feet

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**AOC-2 Ecological VOC Subsurface Soil Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS



**Notes:**

1. Results are posted in mg/kg

Exceeds Plant Limit

2. Qualifiers:

Exceeds Median Background Limit

Exceeds Earthworm and Plant Limits

B = Concentration greater than  
the sample detection limit (SDL)  
but less than the method  
quantitation limit (MQL)



0 100 200  
Feet

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**AOC-3A Ecological Metal Surface Soil Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

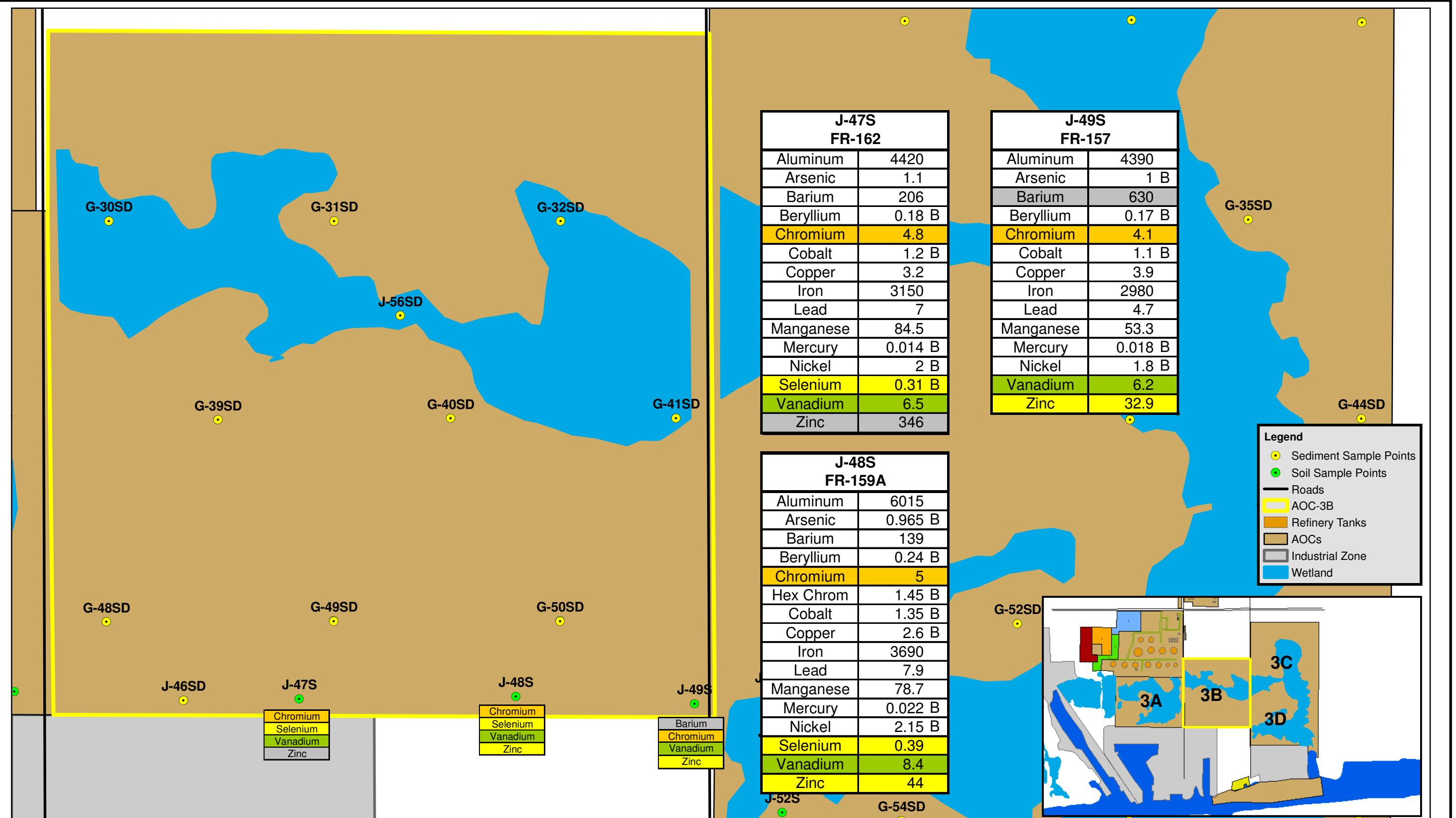
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FIGURE

**27A**


**Notes:**

1. Results are posted in mg/kg

**2. Qualifiers:**

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits
Exceeds Earthworm, Plant, and Median Background Limits



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**AOC-3B  
Ecological  
Metal Surface Soil Distribution Map**

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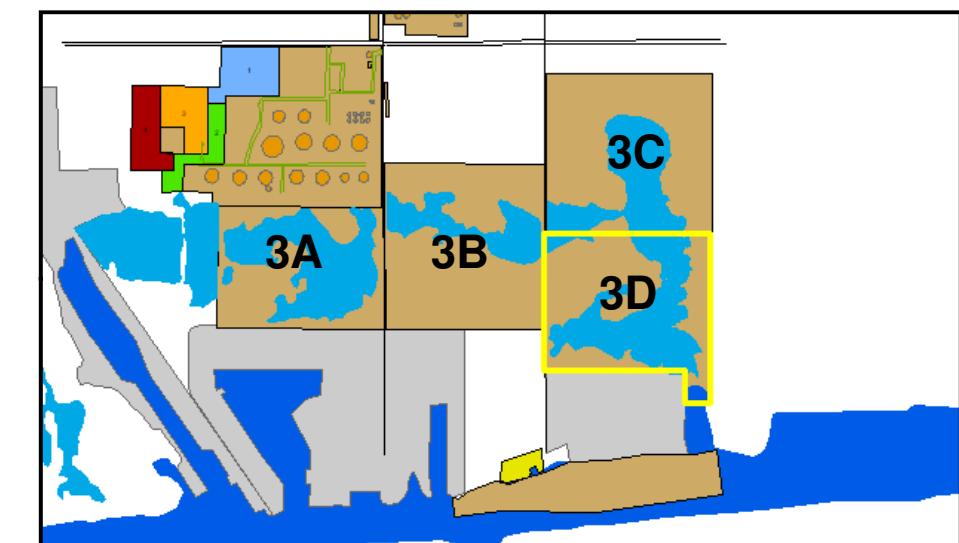
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



J-50S FR-155	
Aluminum	1760
Arsenic	0.72 B
Barium	16.6 B
Beryllium	0.074 B
Chromium	1.4
Cobalt	0.36 B
Copper	2.5 B
Iron	1160
Lead	3.3
Manganese	226
Mercury	0.008 B
Nickel	0.59 B
Vanadium	2.5 B
Zinc	23.9

J-53S FR-136	
Aluminum	3420
Arsenic	2.5
Barium	74.4
Beryllium	0.21 B
Chromium	5.9
Cobalt	0.93 B
Copper	3.9
Iron	3050
Lead	13.5
Manganese	113
Mercury	0.0049 B
Nickel	2.5 B
Vanadium	6.3
Zinc	279

J-52S FR-138	
Aluminum	4590
Arsenic	1 B
Barium	37.9
Beryllium	0.23 B
Chromium	3.6
Cobalt	0.92 B
Copper	4.2
Iron	2450
Lead	4.5
Manganese	100
Mercury	0.008 B
Nickel	2.1 B
Selenium	0.32 U
Vanadium	6.1 B
Zinc	32.8



Notes:

1. Results are posted in mg/kg

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- [Green] Exceeds Plant Limit
- [Yellow] Exceeds Median Background Limit
- [Orange] Exceeds Earthworm and Plant Limits
- [Grey] Exceeds Earthworm, Plant, and Median Background Limits
- [Red] SDL Exceeds Median Background Screening Level

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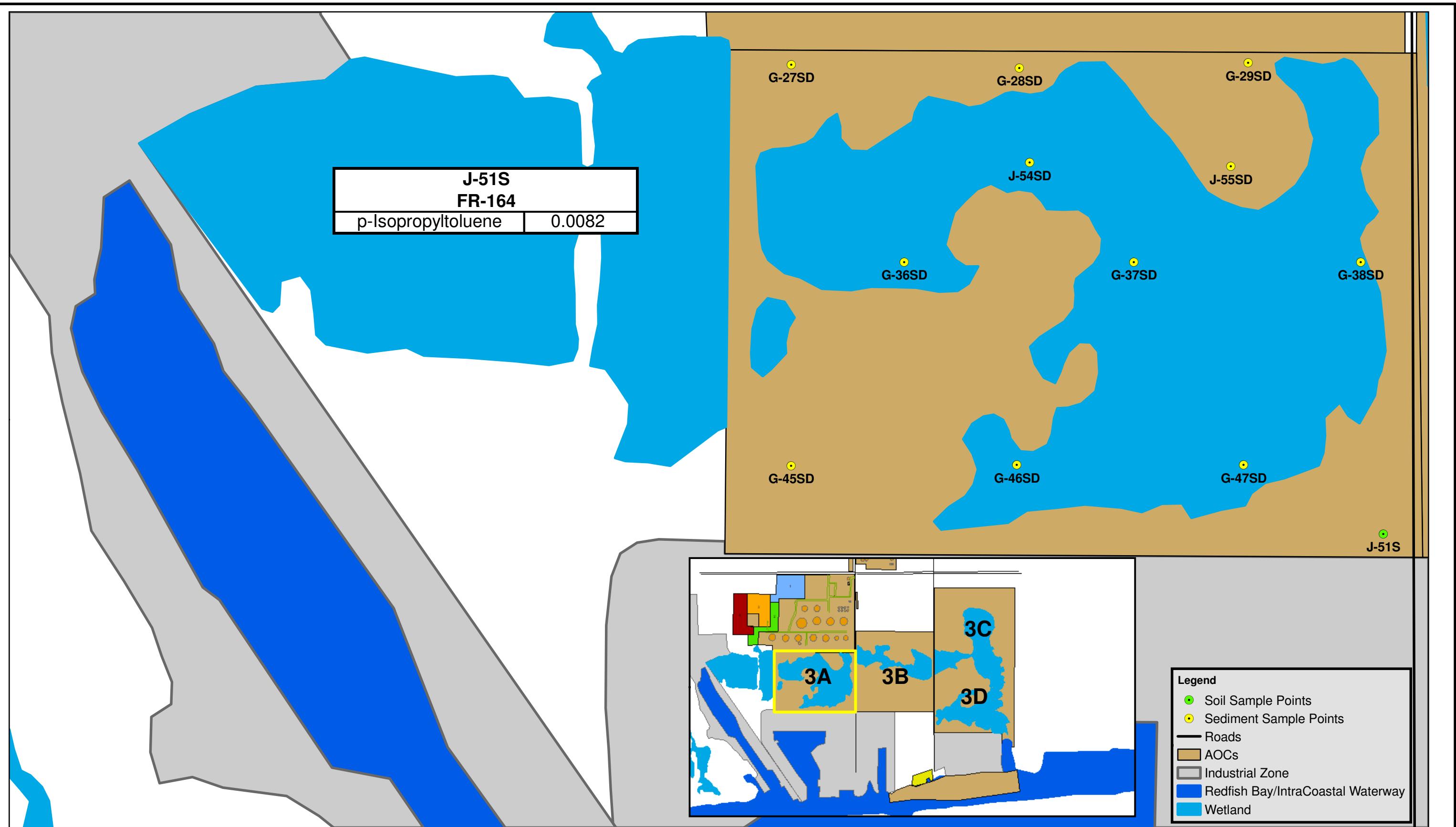
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APPROVED BY:

**AOC-3D  
Ecological  
Metal Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in mg/kg



0 100 200  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

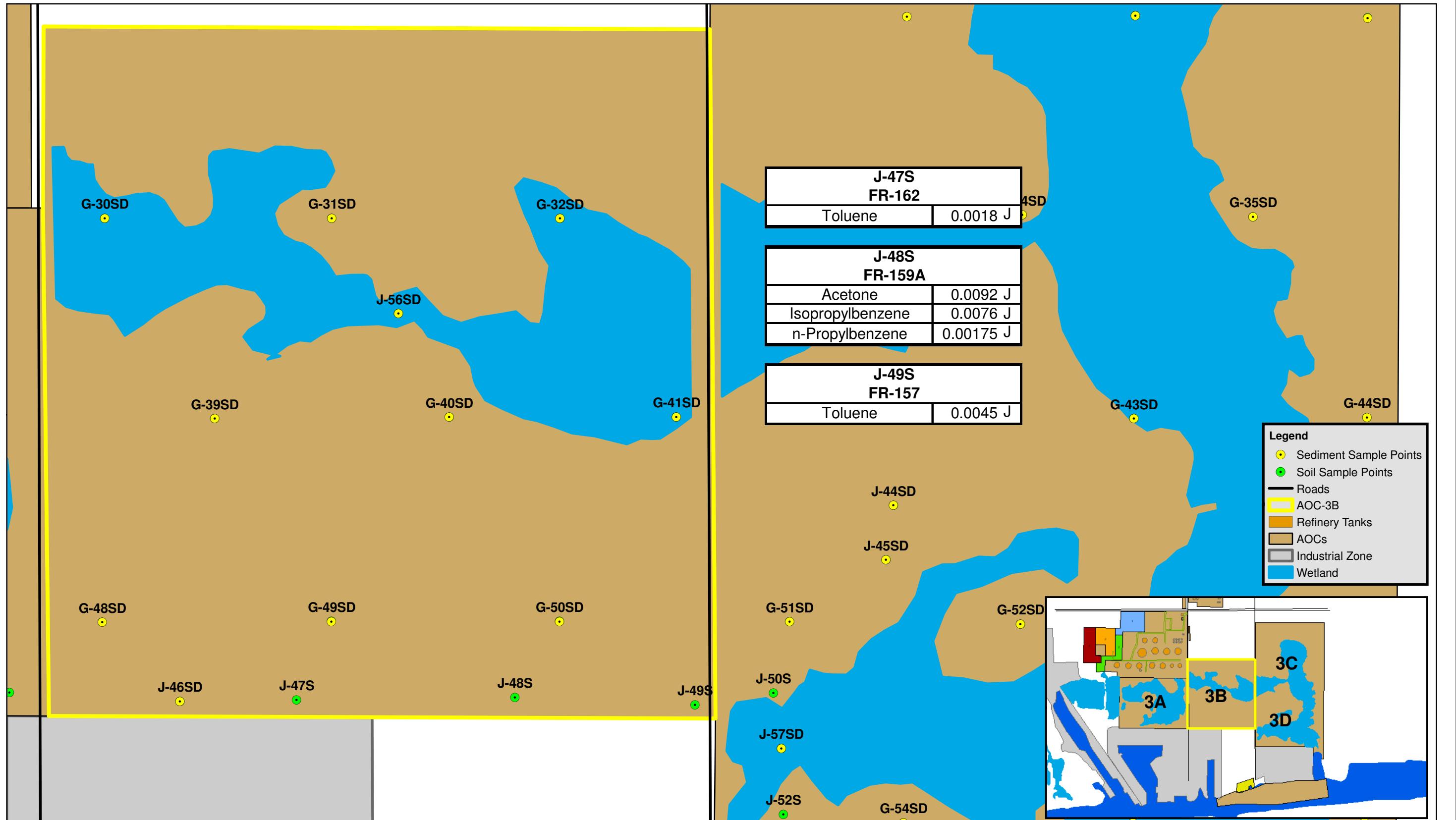
**AOC-3A Ecological VOC Surface Soil Distribution Map**  
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INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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**FIGURE**  
**27D**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than  
the SDL but less than the method  
quantitation limit (MQL)



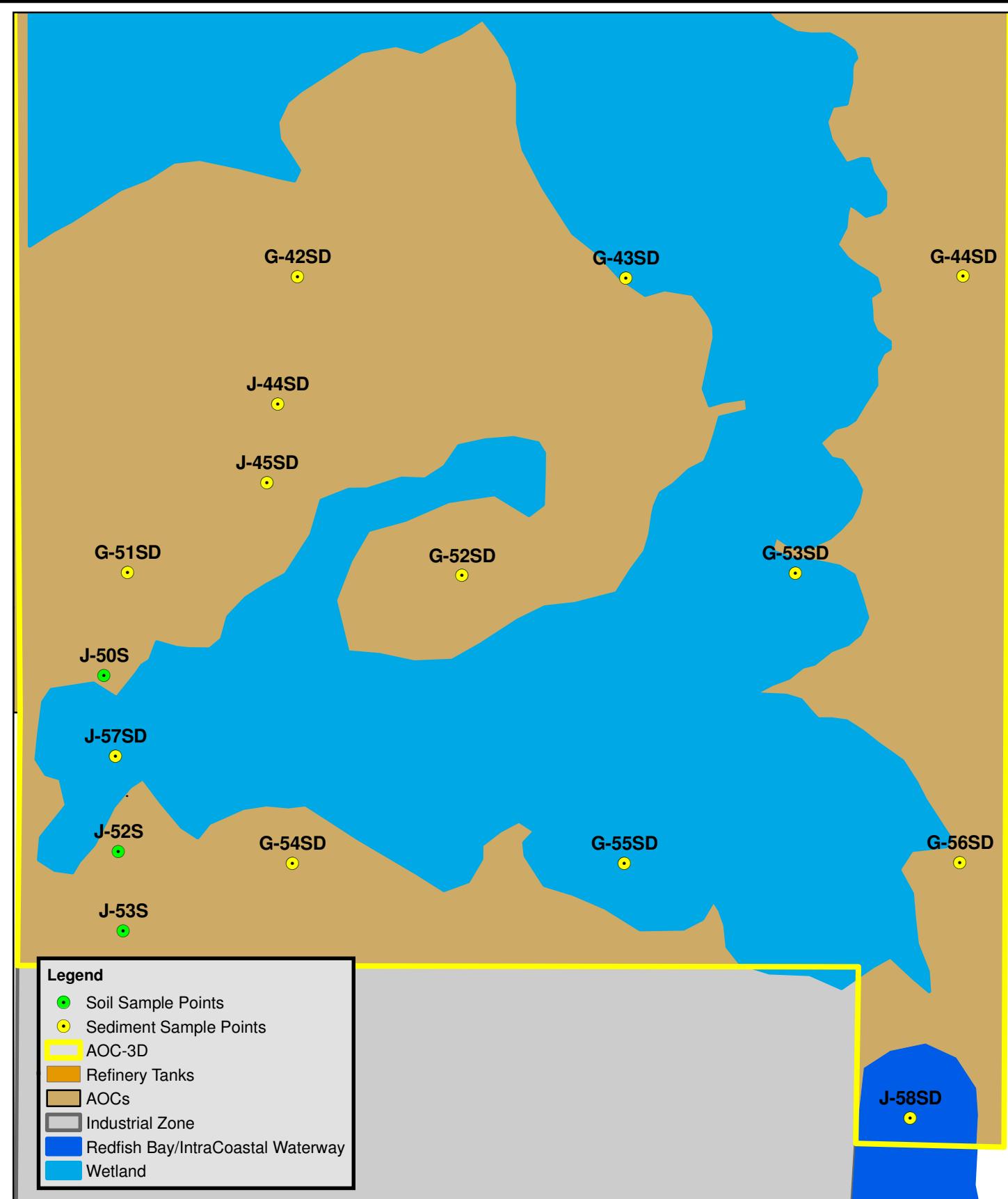
0 100 200  
Feet

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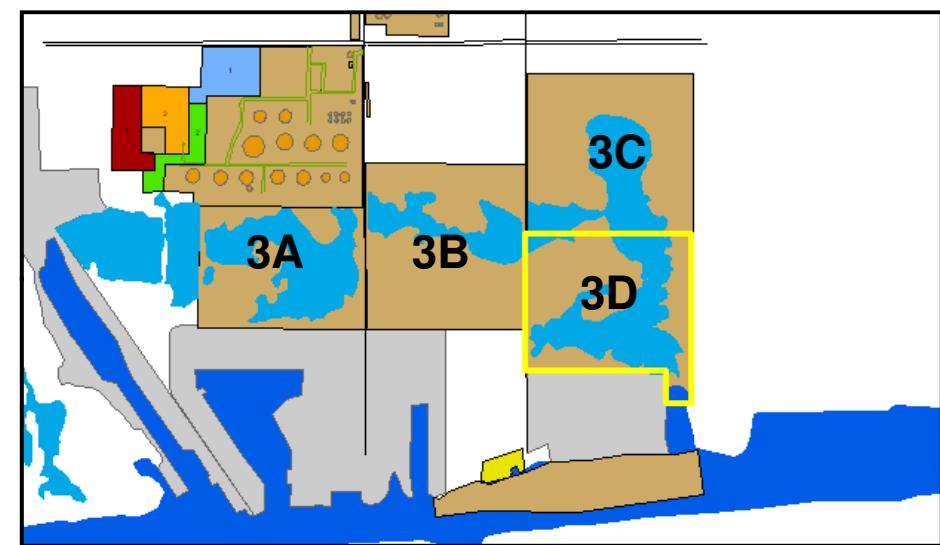
**AOC-3B  
Ecological  
VOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



<b>J-50S</b>	<b>FR-155</b>
Toluene	0.0021 J
<b>J-52S</b>	<b>FR-138</b>
p-Isopropyltoluene	0.0019 J
<b>J-53S</b>	<b>FR-136</b>
Methylene chloride	0.0052 J



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

0 100 200  
Feet

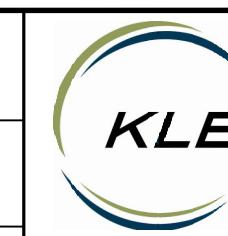


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APPROVED BY:	

**AOC-3D**  
**Ecological**  
**VOC Surface Soil Distribution Map**

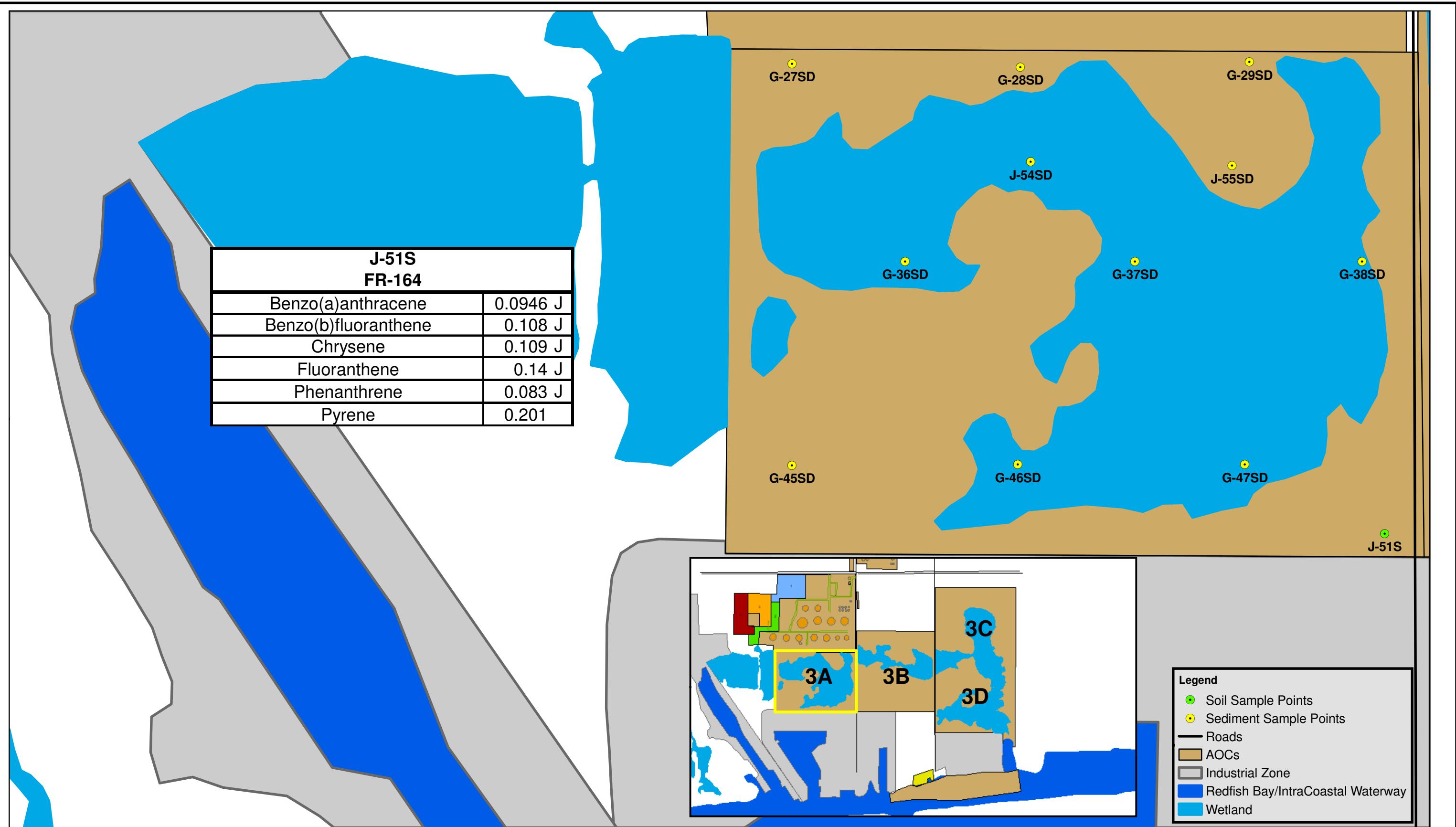
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FIGURE  
**27F**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 100 200  
Feet

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APPROVED BY:	

**AOC-3A Ecological  
SVOC Surface Soil Distribution Map**

**FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS**

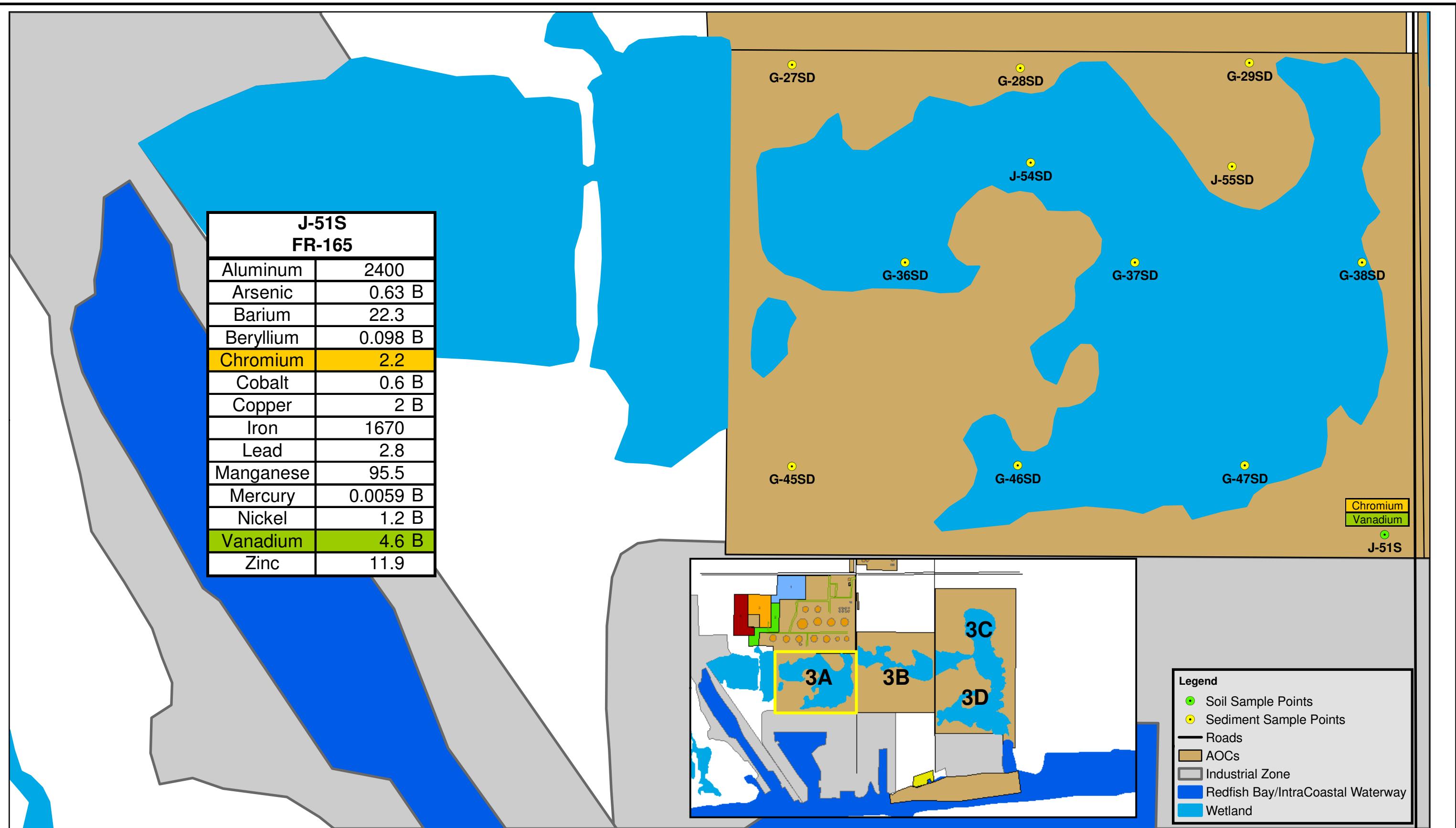
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FIGURE

**27G**



**Notes:**

1. Results are posted in mg/kg

Exceeds Plant Limit

2. Qualifiers:

Exceeds Earthworm and Plant Limits

B = Concentration greater than  
the sample detection limit (SDL)  
but less than the method  
quantitation limit (MQL)



0 110 220  
Feet

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CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-3A Ecological Metal Subsurface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO.

59752

FILE NAME:

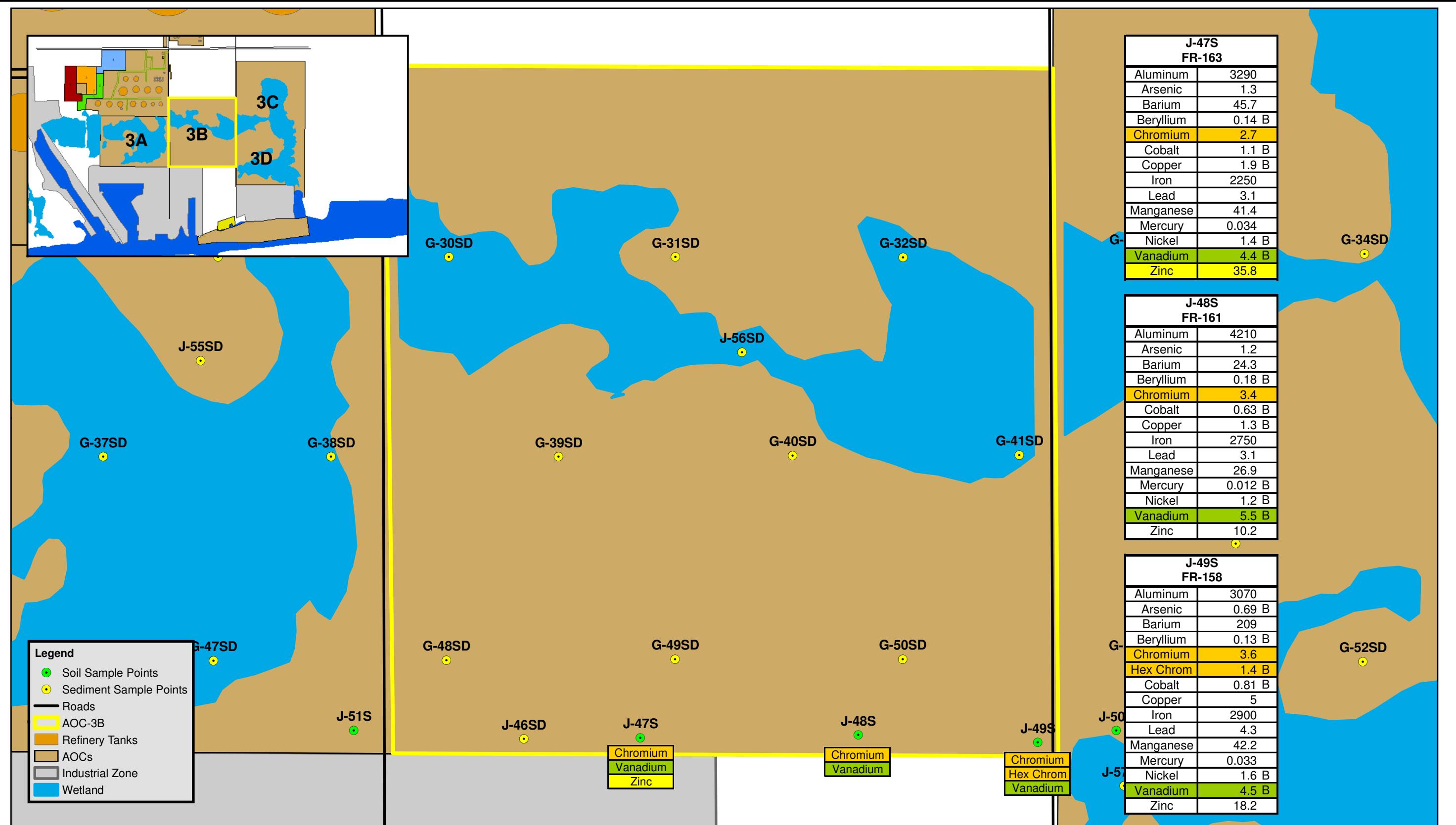
Falcon Refinery Base Map



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FIGURE

**28A**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

Exceeds Plant Limit

Exceeds Median Background Limit

Exceeds Earthworm and Plant Limits

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 110 220  
Feet

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CHECKED BY:	S. HALASZ
APPROVED BY:	

**AOC-3B  
Ecological  
Metal Subsurface Soil Distribution Map**

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INGLESIDE, SAN PATRICIO COUNTY, TEXAS

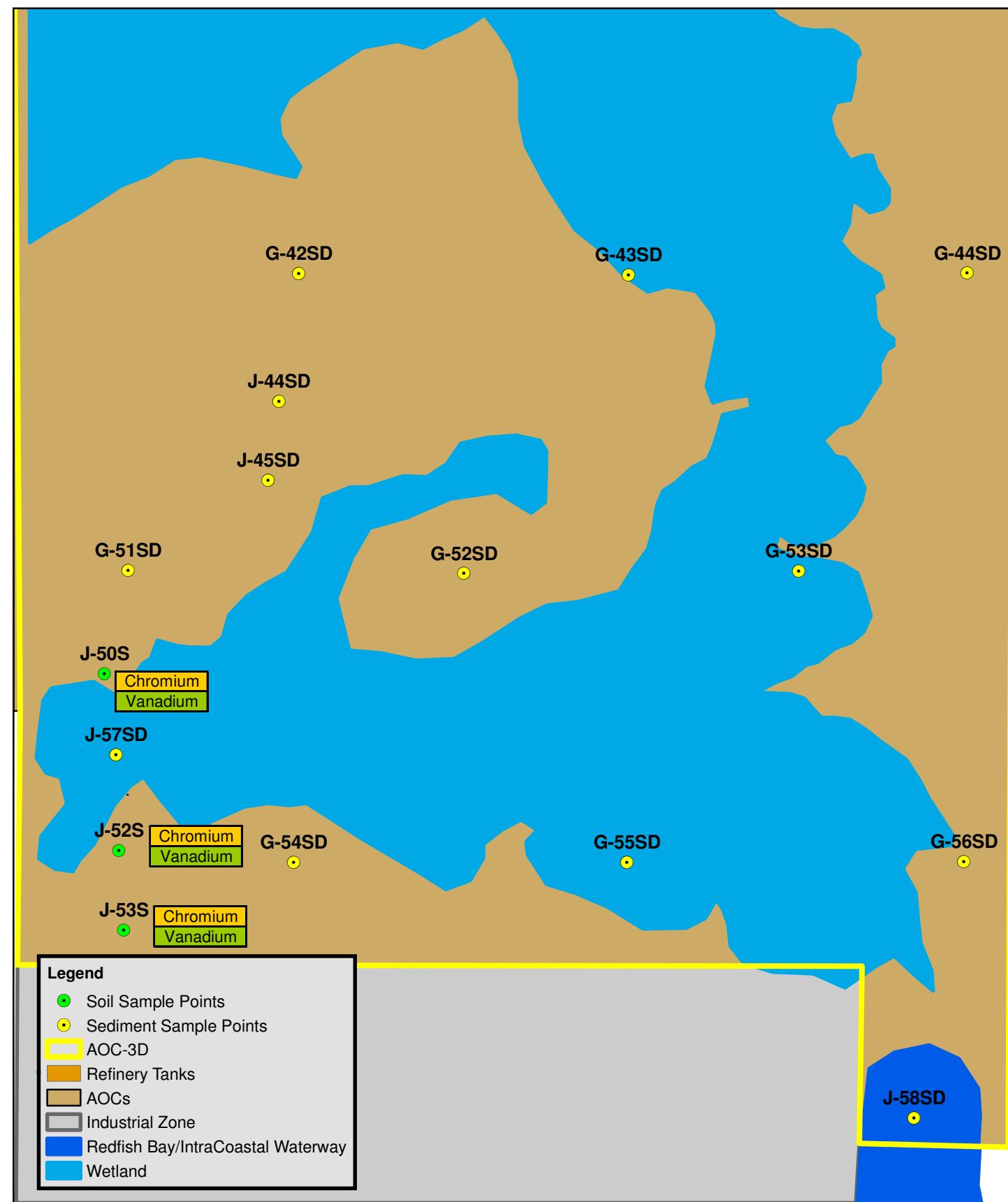
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FIGURE

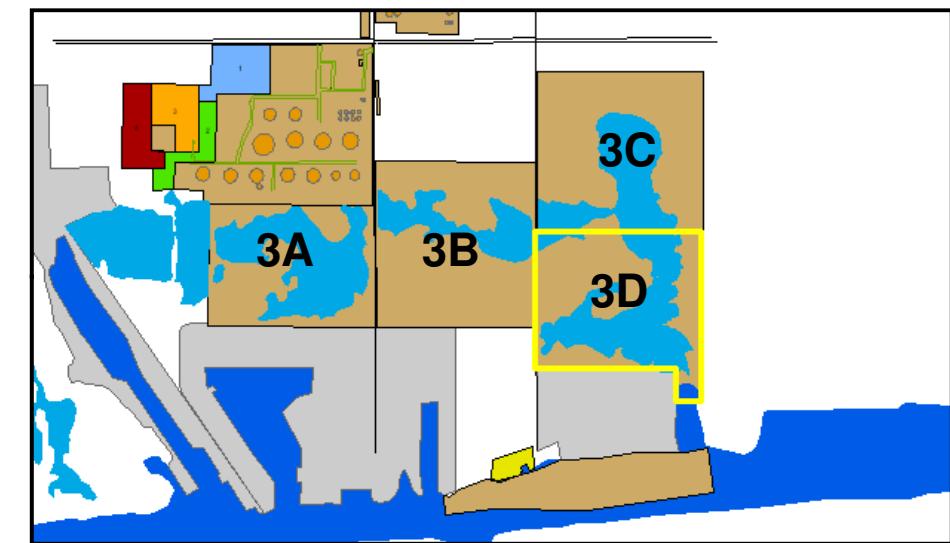
**28B**



J-50S FR-156	
Aluminum	4600
Arsenic	0.52 B
Barium	45.5
Beryllium	0.19 B
Chromium	3.2
Cobalt	1.1 B
Copper	2.6 B
Iron	3060
Lead	2.7
Manganese	76.3
Mercury	0.0065 B
Nickel	1.8 B
Vanadium	5.1 B
Zinc	13.7

J-53S FR-137	
Aluminum	4260
Arsenic	2.4
Barium	17.9 B
Beryllium	0.2 B
Chromium	3.9
Cobalt	0.88 B
Copper	2.3 B
Iron	2680
Lead	2.5
Manganese	113
Mercury	0.002 B
Nickel	2.3 B
Vanadium	7.9
Zinc	17.5

J-52S FR-139	
Aluminum	3570
Arsenic	1.1 B
Barium	21.6 B
Beryllium	0.19 B
Chromium	4
Cobalt	0.8 B
Copper	2 B
Iron	2300
Lead	2.4
Manganese	114
Mercury	0.0023 B
Nickel	1.9 B
Vanadium	5.3 B
Zinc	8.9



**Notes:**

1. Results are posted in mg/kg

Exceeds Plant Limit

2. Qualifiers:

Exceeds Earthworm and Plant Limits

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 110 220  
Feet

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APPROVED BY:	

**AOC-3D  
Ecological  
Metal Subsurface Soil Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS  
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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FIGURE

**28C**



Notes:

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 100 200  
Feet

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CHECKED BY: S. HALASZ

APPROVED BY:

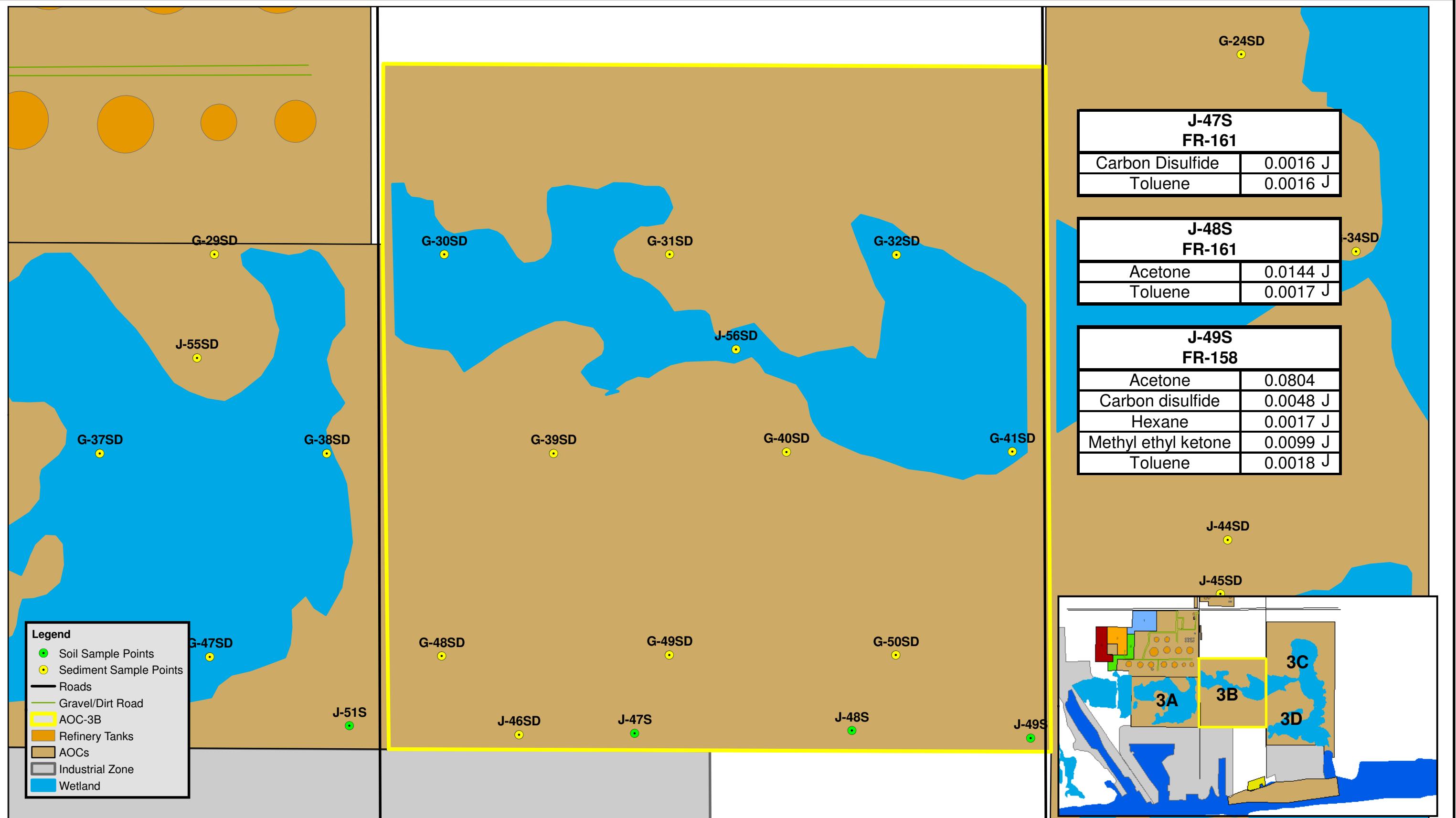
**AOC-3A Ecological VOC Subsurface Soil Distribution Map**  
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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FIGURE

**28D**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the sample detection limit (SDL), but less than the method



0 90 180  
Feet

**AOC-3B Ecological VOC Subsurface Soil Distribution Map**

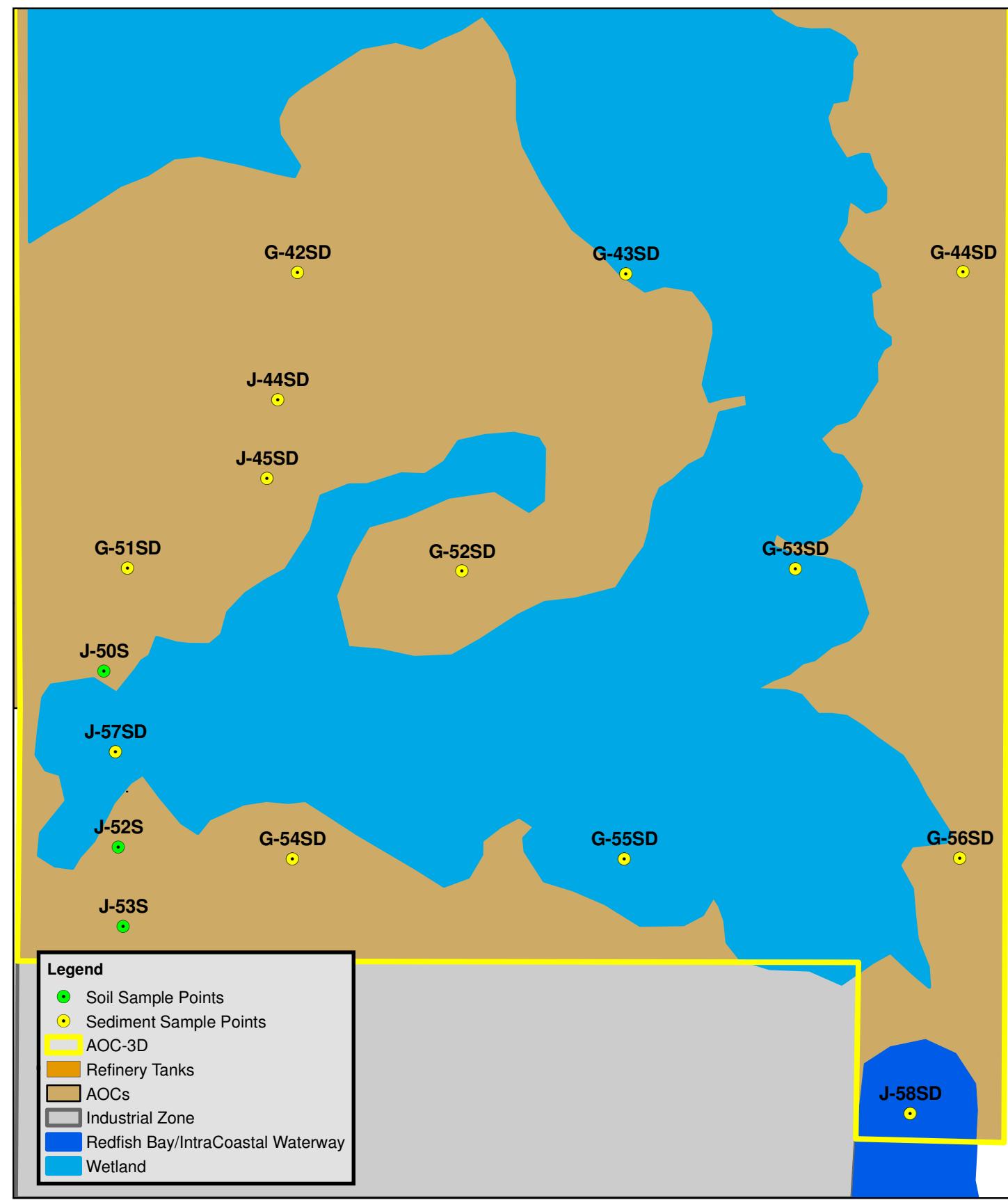
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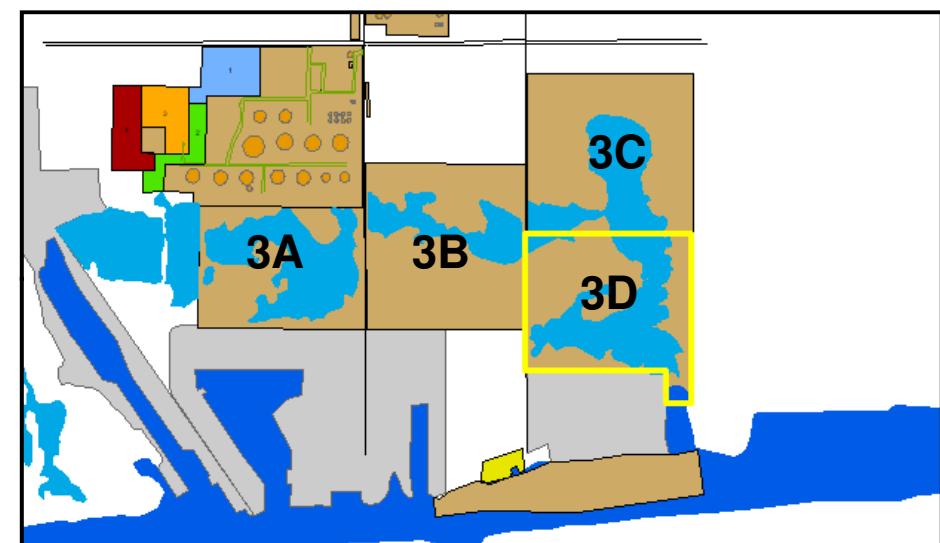
FIGURE  
**28E**



<b>J-50S</b> <b>FR-156</b>	
Acetone	0.0164 J
Toluene	0.0017 J

<b>J-52S</b> <b>FR-139</b>	
Acetone	0.0165 J
Carbon disulfide	0.0023 J

<b>J-53S</b> <b>FR-137</b>	
Acetone	0.0094 J



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than  
the SDL but less than the method  
quantitation limit (MQL)



0 100 200  
Feet

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**AOC-3D**  
**Ecological**  
**VOC Subsurface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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FIGURE  
**28F**

G-27SD FR-141	
Aluminum	2390
Arsenic	1.6
Barium	514
Beryllium	0.11 B
Chromium	2.4
Cobalt	0.95 B
Copper	2.8
Iron	2260
Lead	4.2
Manganese	77
Nickel	1.3 B
Vanadium	6
Zinc	29.6

G-37SD FR-170	
Aluminum	10300
Arsenic	4.7
Barium	277
Beryllium	0.4 B
Chromium	9.4
Cobalt	2.5 B
Copper	8
Iron	6910
Lead	12.4
Manganese	270
Mercury	0.015 B
Nickel	4.9 B
Vanadium	16.8
Zinc	187

G-47SD FR-173	
Aluminum	10400
Arsenic	2.6
Barium	343
Beryllium	0.42 B
Chromium	7.6
Hex Chrom	1.8 B
Cobalt	2.9 B
Copper	4.6
Iron	6960
Lead	9.5
Manganese	210
Mercury	0.015 B
Nickel	4.4 B
Vanadium	13.6
Zinc	64.1

G-28SD FR-142A	
Aluminum	6165
Arsenic	1.6
Barium	118
Beryllium	0.225 B
Chromium	4.45
Cobalt	1.4 B
Copper	2.95
Iron	3990
Lead	6.7
Manganese	100.6
Mercury	0.00335 B
Nickel	2.45 B
Selenium	1.065
Vanadium	9.6
Zinc	32.25

G-38SD FR-171	
Aluminum	5620
Arsenic	2.4
Barium	404
Beryllium	0.21 B
Chromium	5.7
Cobalt	1.4 B
Copper	4.2
Iron	3830
Lead	10.6
Manganese	177
Mercury	0.0085 B
Nickel	2.7 B
Selenium	0.34 B
Vanadium	8.3
Zinc	122

J-54SD FR-150	
Aluminum	18900
Arsenic	5
Barium	332
Beryllium	0.68 B
Chromium	14.6
Cobalt	4.3 B
Copper	12.1
Iron	12000
Lead	17.9
Manganese	427
Mercury	0.034 B
Nickel	8 B
Vanadium	25.1
Zinc	208

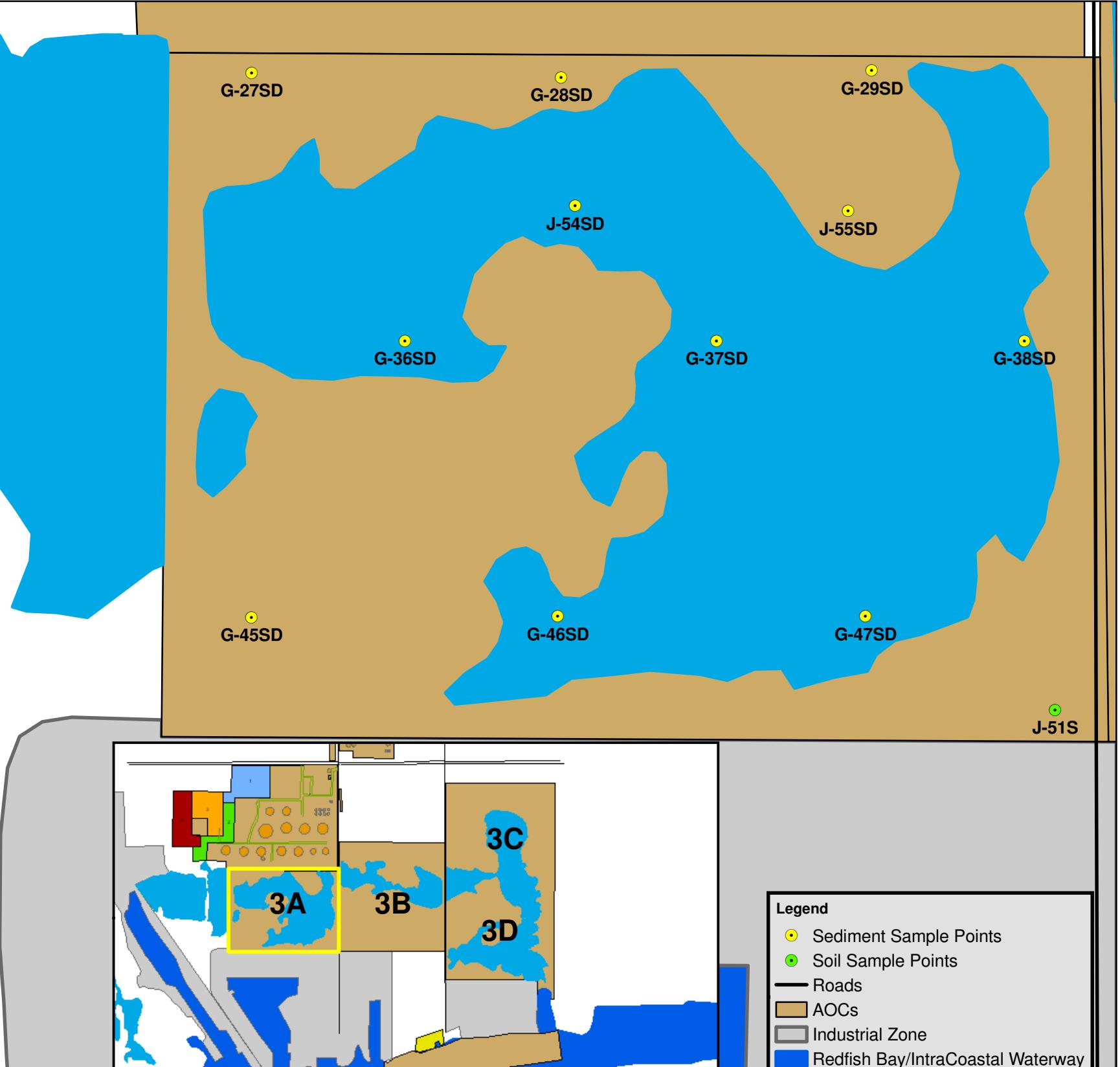
G-29SD FR-144	
Aluminum	1490
Arsenic	1.7
Barium	63.9
Beryllium	0.064 B
Chromium	1.3
Cobalt	0.46 B
Copper	2.6 B
Iron	1190
Lead	2.4
Manganese	54.9
Nickel	0.83 B
Vanadium	3 B
Zinc	34.5

G-45SD FR-174	
Aluminum	4290
Arsenic	0.67 B
Barium	174
Beryllium	0.21 B
Chromium	4.2
Cobalt	1.3 B
Copper	4.1
Iron	3370
Lead	4.7
Manganese	49.4
Mercury	0.019
Nickel	2.1 B
Vanadium	6.2
Zinc	96.5

J-55SD FR-152A	
Aluminum	4655
Arsenic	1.3
Barium	208.5
Beryllium	0.19 B
Chromium	4.2
Cobalt	1.15 B
Copper	3.25
Iron	3370
Lead	7.65
Manganese	72.3
Mercury	0.014 B
Nickel	2.05 B
Vanadium	6.6
Zinc	59.8

G-36SD FR-168	
Aluminum	11700
Arsenic	3.3
Barium	211
Beryllium	0.43 B
Chromium	9.2
Cobalt	2.8 B
Copper	7.7
Iron	7580
Lead	11.9
Manganese	352
Mercury	0.021 B
Nickel	5.4
Vanadium	16.1
Zinc	119

G-46SD FR-176	
Aluminum	23100
Arsenic	8.9
Barium	1100
Beryllium	0.97
Chromium	23.8
Cobalt	5.8 B
Copper	24.9
Iron	16000
Lead	34.1
Manganese	588
Mercury	0.033 B
Nickel	12.7
Vanadium	39.9
Zinc	896



Notes:

1. Results are posted in mg/kg

Above Sediment Marine Limit

2. Qualifiers:  
B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



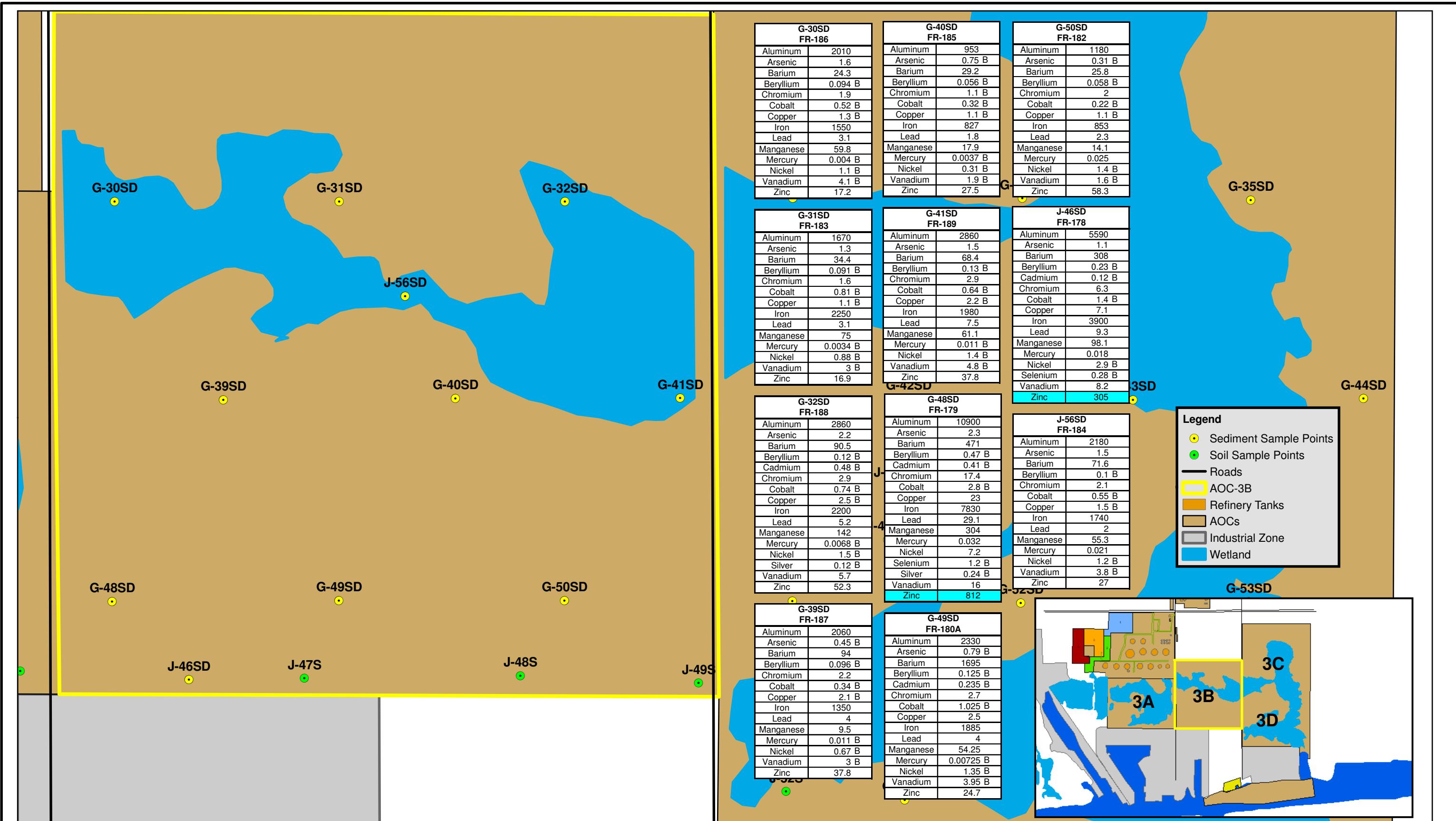
0 100 200  
Feet

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CHECKED BY: S. HALASZ  
APPROVED BY:  
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

**AOC-3A Ecological Metal Sediment Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS  
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

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FIGURE  
**29A**



Notes:

1. Results are posted in mg/kg

Above Sediment Marine Limit

2. Qualifiers:

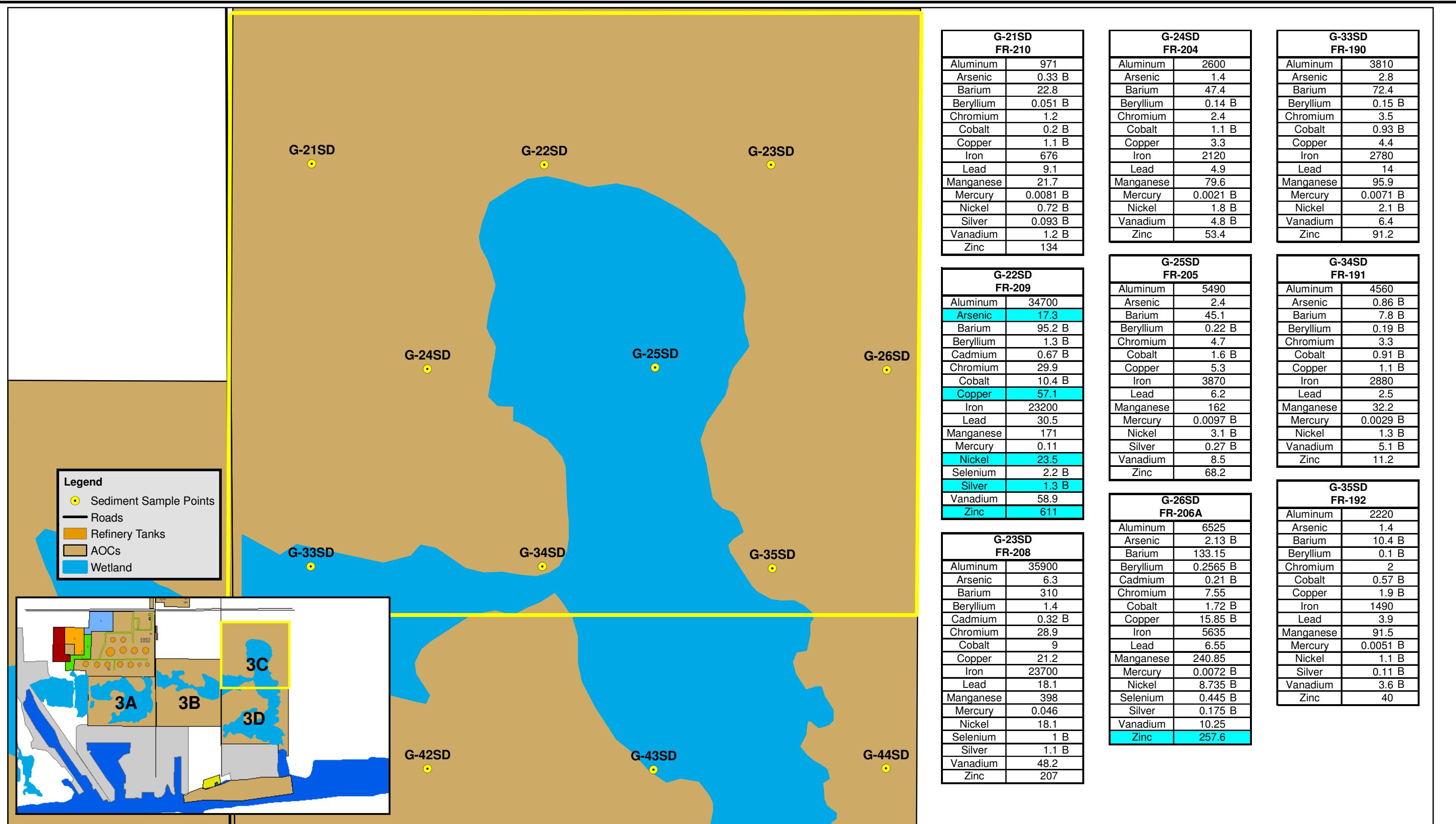
B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

0 110 220  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-3B Ecological Metal Sediment Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS  
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map





**Notes:**

1. Results are posted in mg/kg

  Above Sediment Marine Limit

2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



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CHECKED BY: S. HALASZ	
APPROVED BY:	
PROJ NO.	59752

**AOC-3C Ecological Metal Sediment Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS  
FILE NAME: Falcon Refinery Base Map



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**FIGURE  
29C**



<b>G-27SD</b> <b>FR-141</b>	
Acetone	0.0082 J

<b>G-45SD</b> <b>FR-174</b>	
Methylene chloride	0.0033 J

<b>G-29SD</b> <b>FR-144</b>	
Acetone	0.0092 J

<b>G-46SD</b> <b>FR-176</b>	
Acetone	0.18

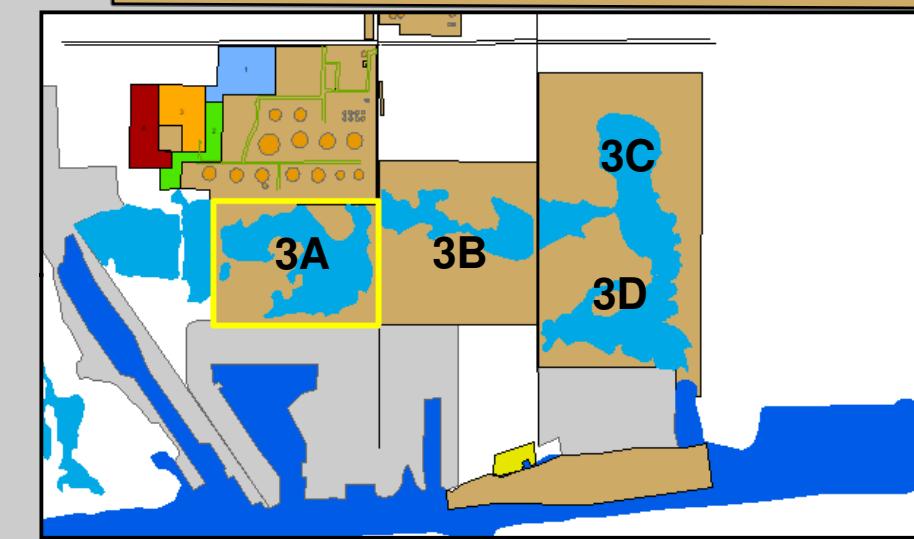
<b>G-36SD</b> <b>FR-168</b>	
Acetone	0.0436 J
Carbon disulfide	0.0068 J
Methylene chloride	0.004 J

<b>G-47SD</b> <b>FR-173</b>	
Acetone	0.0659 J

<b>G-37SD</b> <b>FR-170</b>	
Acetone	0.174
Carbon disulfide	0.0112 J
Methyl ethyl ketone	0.026 J
Methylene chloride	0.0064 J
Toluene	0.0376

<b>J-54SD</b> <b>FR-150</b>	
Acetone	0.0722 J
Toluene	0.005 J

<b>G-38SD</b> <b>FR-171</b>	
Acetone	0.0562 J
Methyl ethyl ketone	0.01 J
Methylene chloride	0.0042 J



**Legend**

- Sediment Sample Points
- Soil Sample Points
- Roads
- AOCs
- Industrial Zone
- Redfish Bay/IntraCoastal Waterway
- Wetland

**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 100 200  
Feet

DATE DRAWN: 7/8/08 DATE REVISED:

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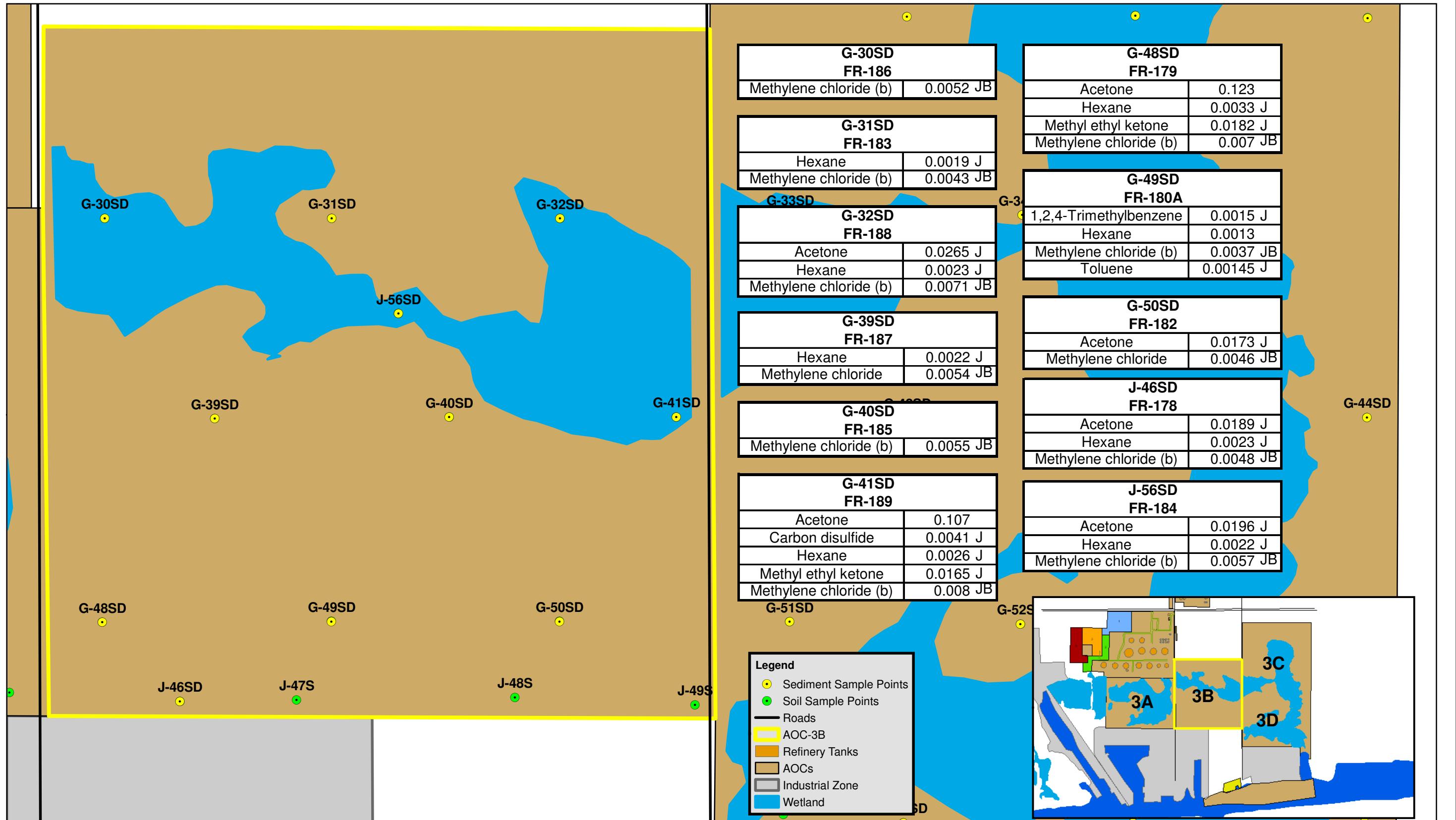
CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-3A**  
**Ecological**  
**VOC Sediment Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

B = Analyte found in associated method blank



0 100 200  
Feet

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CHECKED BY:	S. HALASZ
APPROVED BY:	

**AOC-3B Ecological VOC Sediment Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE

**29F**



**Notes:**

1. Results are posted in mg/kg

Exceeds Sediment Marine Screening Level

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)



0 100 200  
Feet

DATE DRAWN: 7/8/08 DATE REVISED:

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CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-3B Ecological SVOC Sediment Distribution Map**

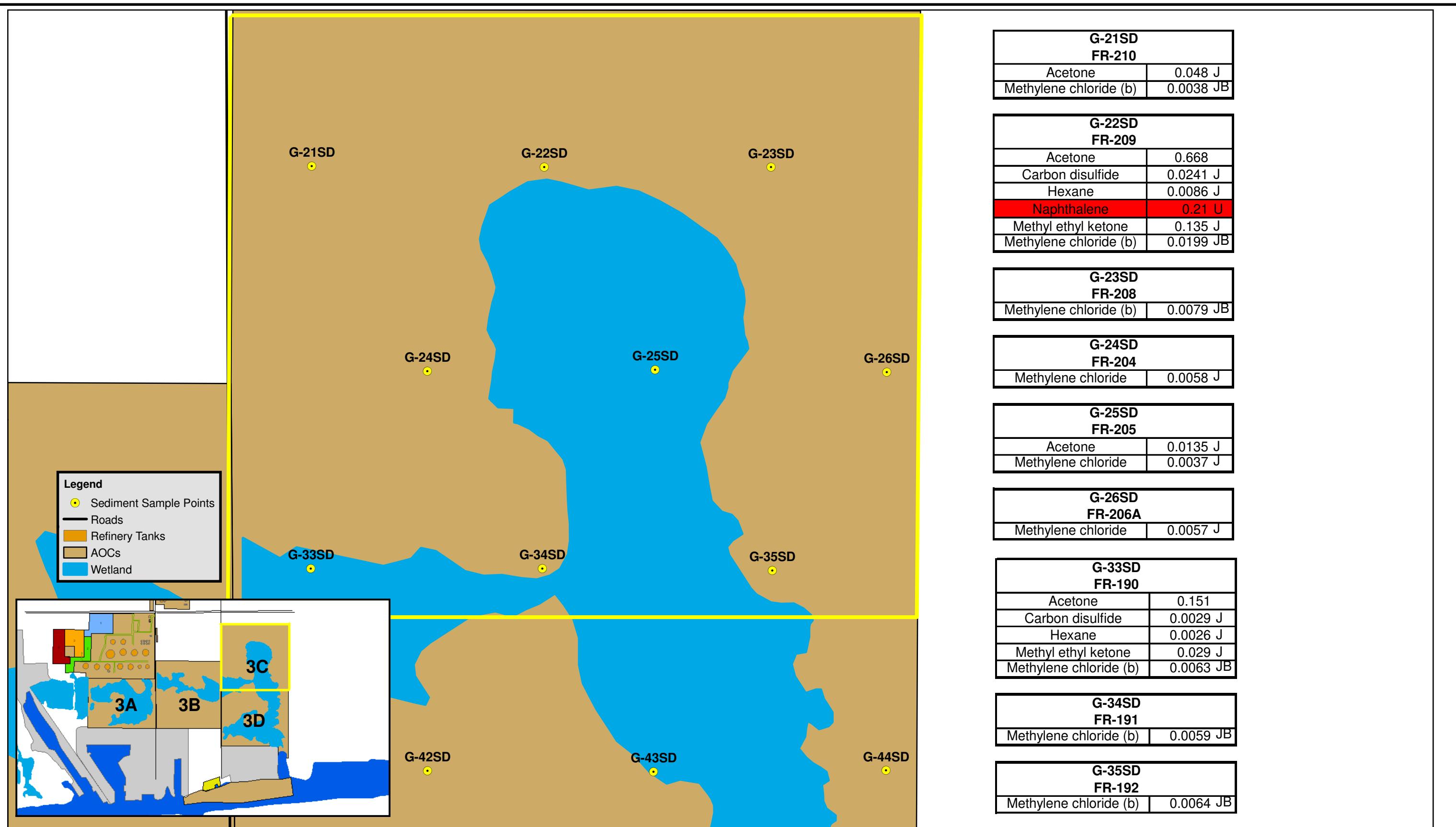
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

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FIGURE

**29J**



**Notes:**

1. Results are posted in mg/kg

  Exceeds Sediment Marine Screening Level

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

B = Analyte found in associated method blank

0      100      200  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-3C  
Ecological  
VOC Sediment Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE

**29G**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

B = Analyte found in associated method blank

0 100 200  
Feet



DATE DRAWN: 7/8/08 DATE REVISED:

DRAFTED BY: C. SEATON

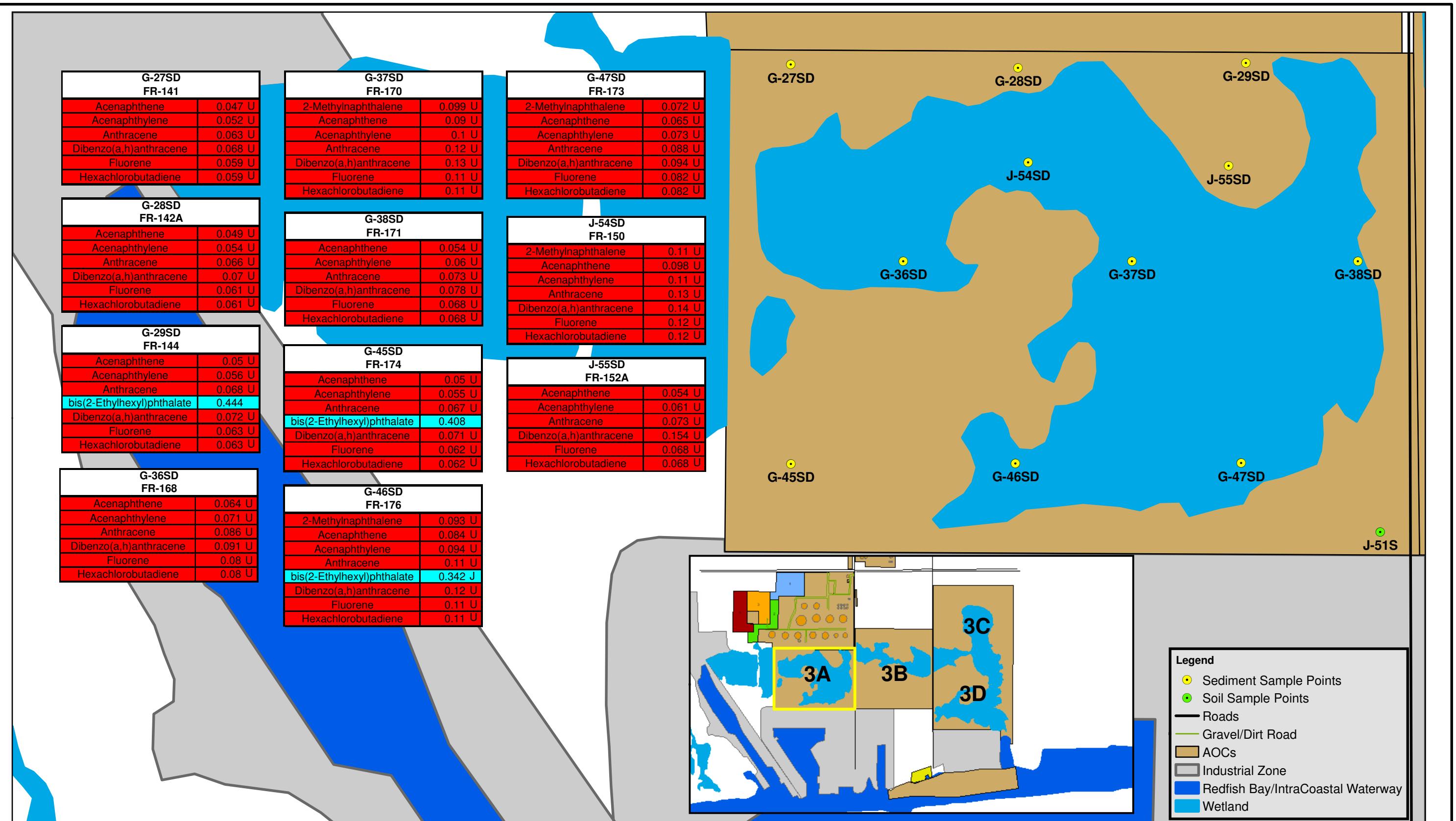
CHECKED BY: S. HALASZ

APPROVED BY:

### AOC-3D Ecological VOC Sediment Distribution Map

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in mg/kg

Above Sediment Marine Limit

2. Qualifiers:

Exceeds Sediment Marine Screening Level

U = Undetected at the sample detection limit (SDL)

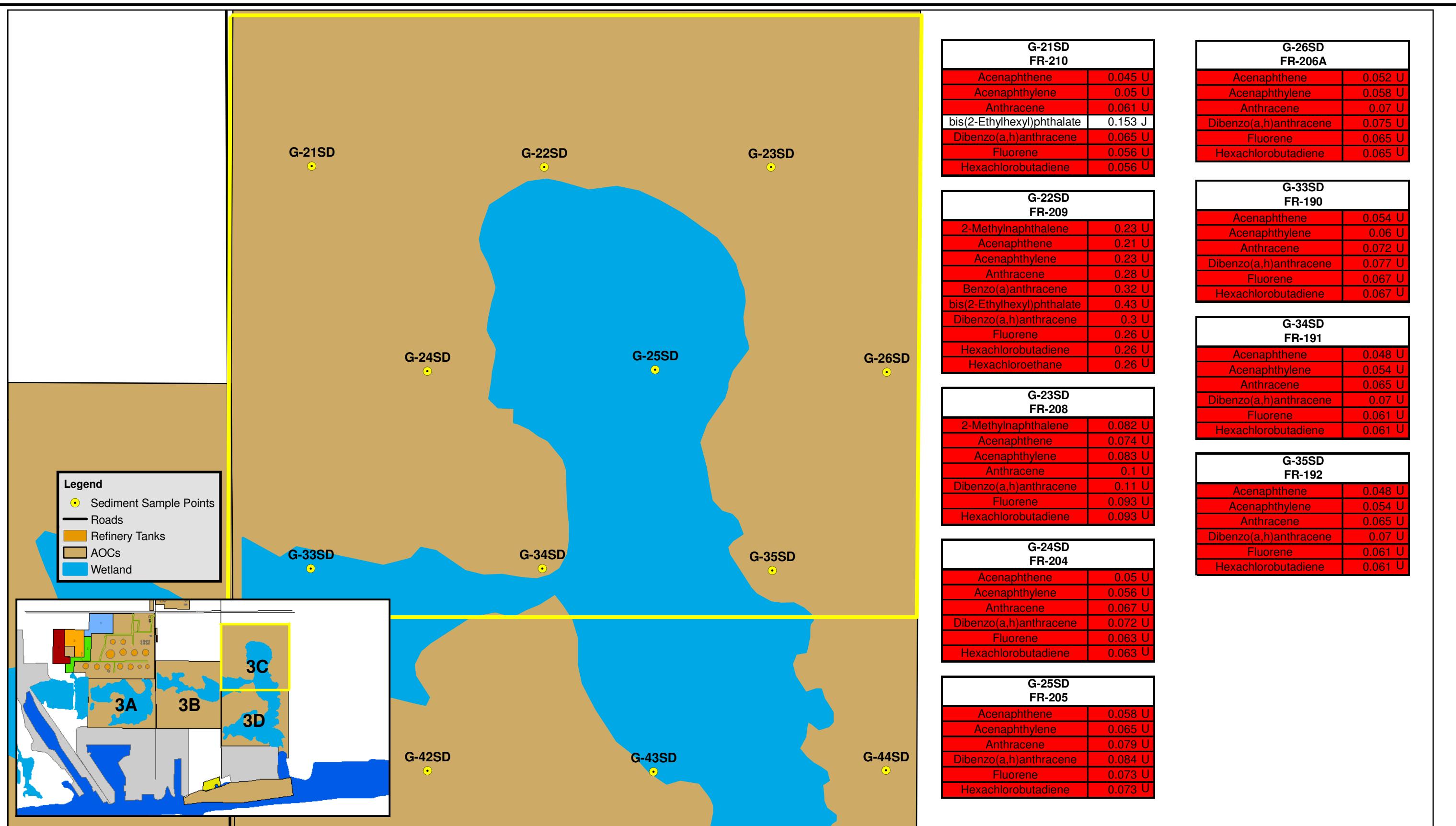
J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

0 110 220

Feet

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APPROVED BY:	
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59752	Falcon Refinery Base Map

**AOC-3A Ecological SVOC Sediment Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS



**Notes:**

1. Results are posted in mg/kg

  Exceeds Sediment Marine Screening Level

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)



0      100      200  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-3C Ecological SVOC Sediment Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE

**29K**



### Notes:

### **1. Results are posted in mg/kg**

## **2. Qualifiers:**

**U = Undetected at the sample detection limit (SDL)**



0 90

 Above Sediment Marine Limit  
 Exceeds Sediment Marine Screening Level

0      90      180

Ect

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**AOC-3D  
Ecological  
SVOC Sediment Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



The image shows the KLEINFELDER logo, which consists of the company name in a large, bold, black serif font. To the left of the text is a graphic element featuring three curved bands in light blue, medium blue, and dark blue. Below the main name is the tagline "Bright People. Right Solutions." in a smaller, italicized black serif font. At the bottom of the card, the company's address is listed as "3601 Manor Road, Austin, Texas 78723" and the phone number as "Phone: 512-926-6651 Fax: 512-926-3312". The website "www.kleinfelder.com" is also present at the bottom.

## FIGURE

29L



**Notes:**

1. Results are posted in mg/kg

  Exceeds Sediment Marine Screening Level

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)



0 100 200  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-3D Ecological Pesticide Sediment Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

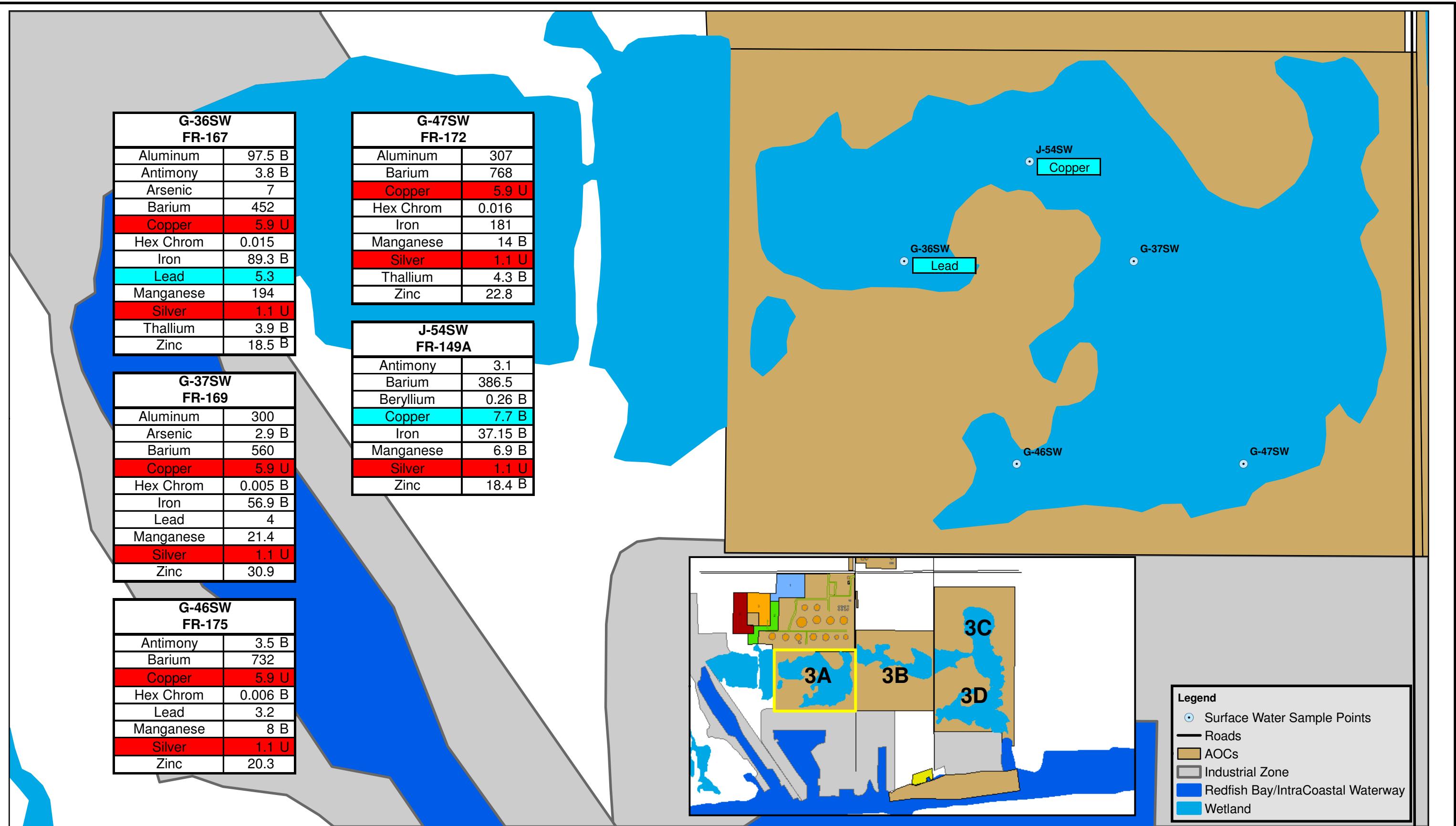
<b>G-44SD FR-200</b>	
4,4'-DDT	0.0019 U
Dieldrin	0.0011 U
gamma-BHC (Lindane)	0.00093 U

<b>G-51SD FR-193A</b>	
4,4'-DDT	0.0018 U
Dieldrin	0.0011 U
gamma-BHC (Lindane)	0.00089 U

<b>G-54SD FR-213</b>	
4,4'-DDT	0.0019 U
Dieldrin	0.0012 U
gamma-BHC (Lindane)	0.00094 U

FIGURE

**29M**



**Notes:**

1. Results are posted in  $\mu\text{g/l}$

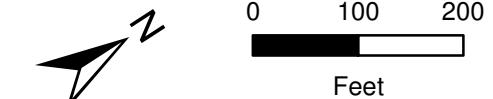
█ Above Marine Limit

2. Qualifiers:

█ Exceeds Marine Screening Level

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



Feet

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**AOC-3A  
Ecological  
Metal Surface Water Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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FIGURE

**30A**



**Notes:**

1. Results are posted in  $\mu\text{g/l}$

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Marine Limit

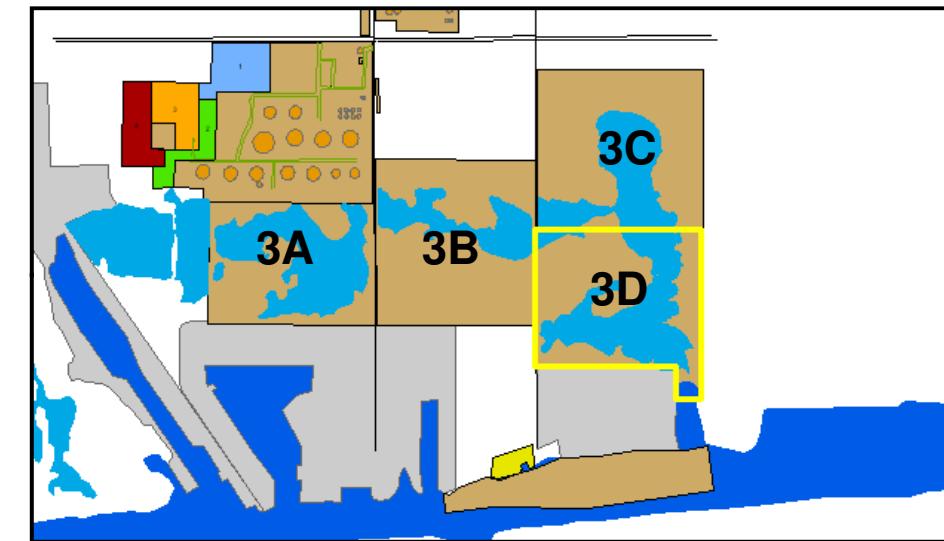
Exceeds Marine Screening Level



0 110 220  
Feet

J-57SW FR-211	
Aluminum	699
Antimony	4.1 B
Arsenic	10.6
Barium	393
Copper	5.9 U
Iron	576
Lead	4.8
Manganese	151
Nickel	3.7 B
Silver	1.1 U
Vanadium	5.1 B
Zinc	75.8

J-58SW FR-217	
Aluminum	128 B
Antimony	4.2 B
Barium	49.1 B
Copper	5.9 U
Iron	104
Lead	10.2
Manganese	14.5 B
Silver	1.1 U
Thallium	9.2 B
Vanadium	1.6 B
Zinc	21.7



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CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-3D  
Ecological  
Metal Surface Water Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

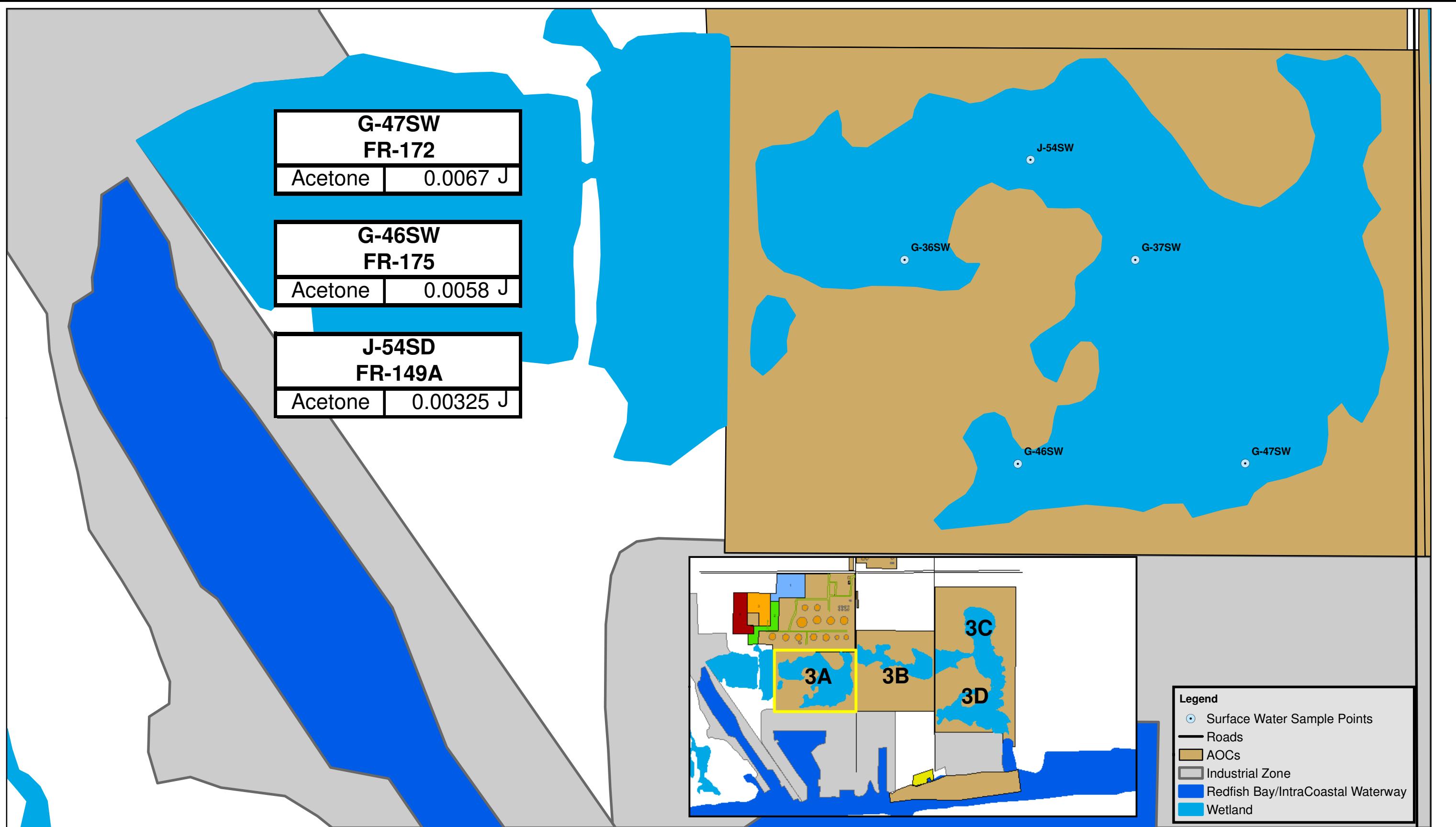
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FIGURE

**30B**



**Notes:**

1. Results are posted in mg/l

2. Qualifiers:

J = Concentration greater than  
the sample detection limit (SDL)  
but less than the method  
quantitation limit (MQL)



0 100 200  
Feet

DATE DRAWN:	DATE REVISED:
7/8/08	

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-3A**  
**Ecological**  
**VOC Surface Water Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO.

59752

FILE NAME:

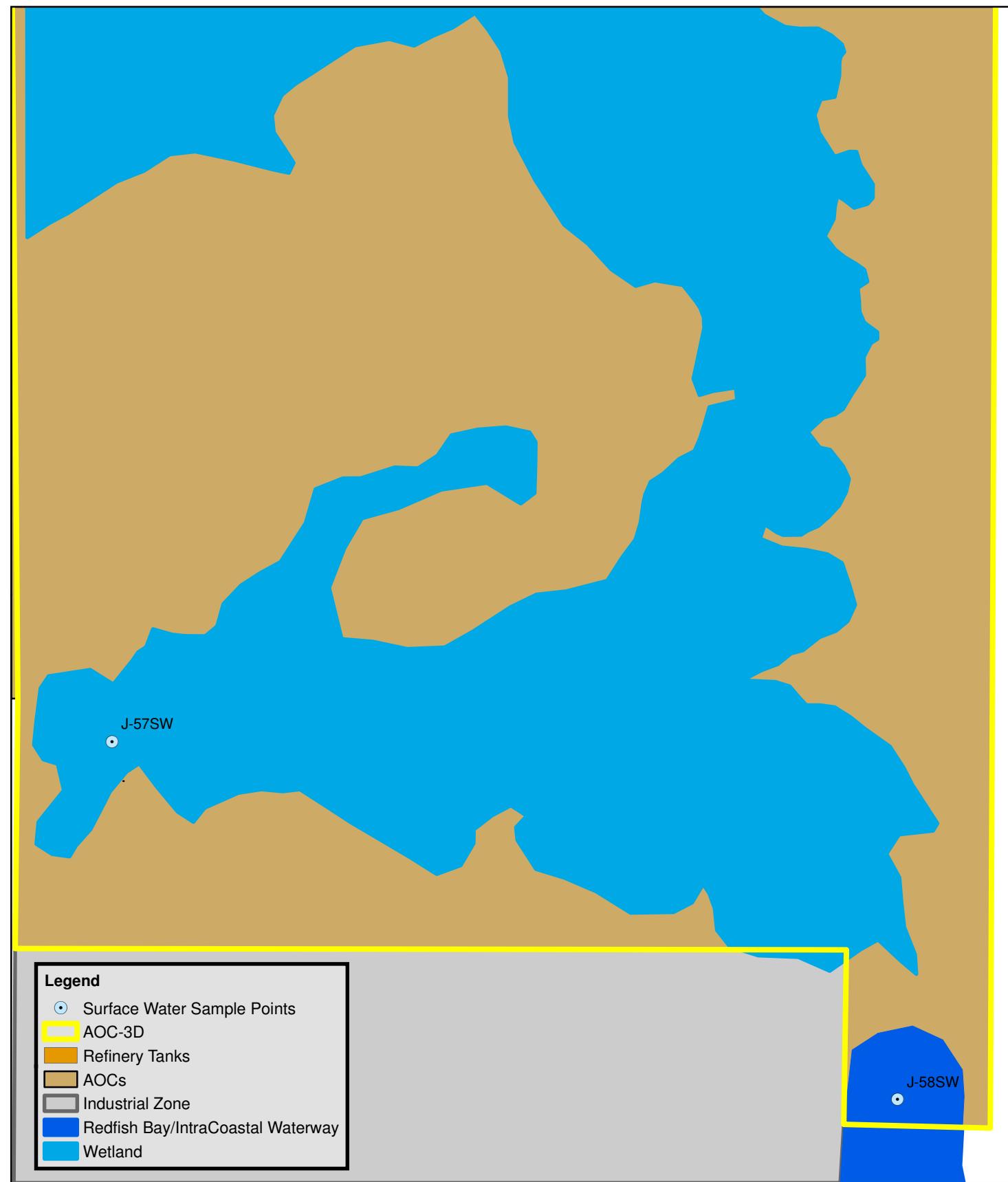
Falcon Refinery Base Map



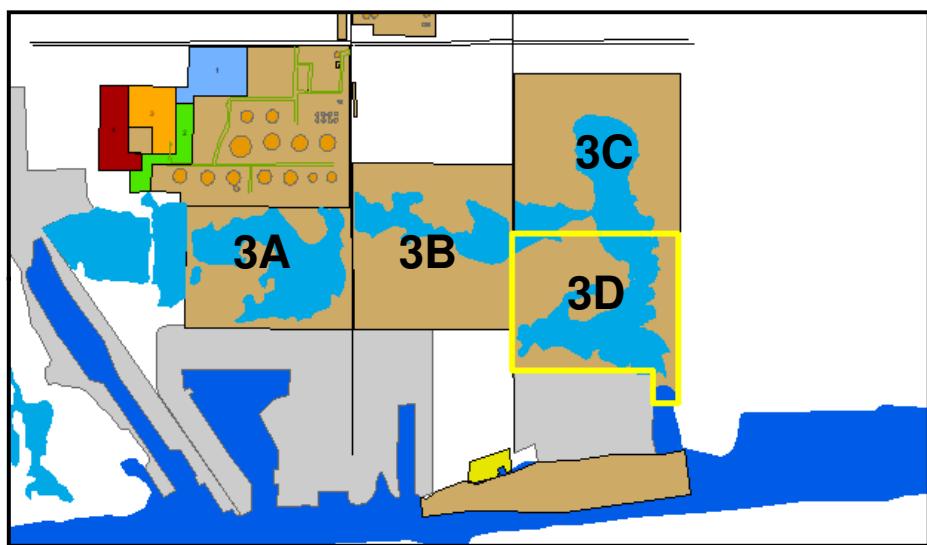
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FIGURE

**30C**



<b>J-57SW</b>	
<b>FR-211</b>	
Acetone	0.0056 J



**Notes:**

1. Results are posted in mg/l

2. Qualifiers:

J = Concentration greater than  
the sample detection limit (SDL)  
but less than the method  
quantitation limit (MQL)



0 100 200  
Feet

DATE DRAWN:	DATE REVISED:
7/8/08	
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

**AOC-3D**  
**Ecological**  
**VOC Surface Water Distribution Map**

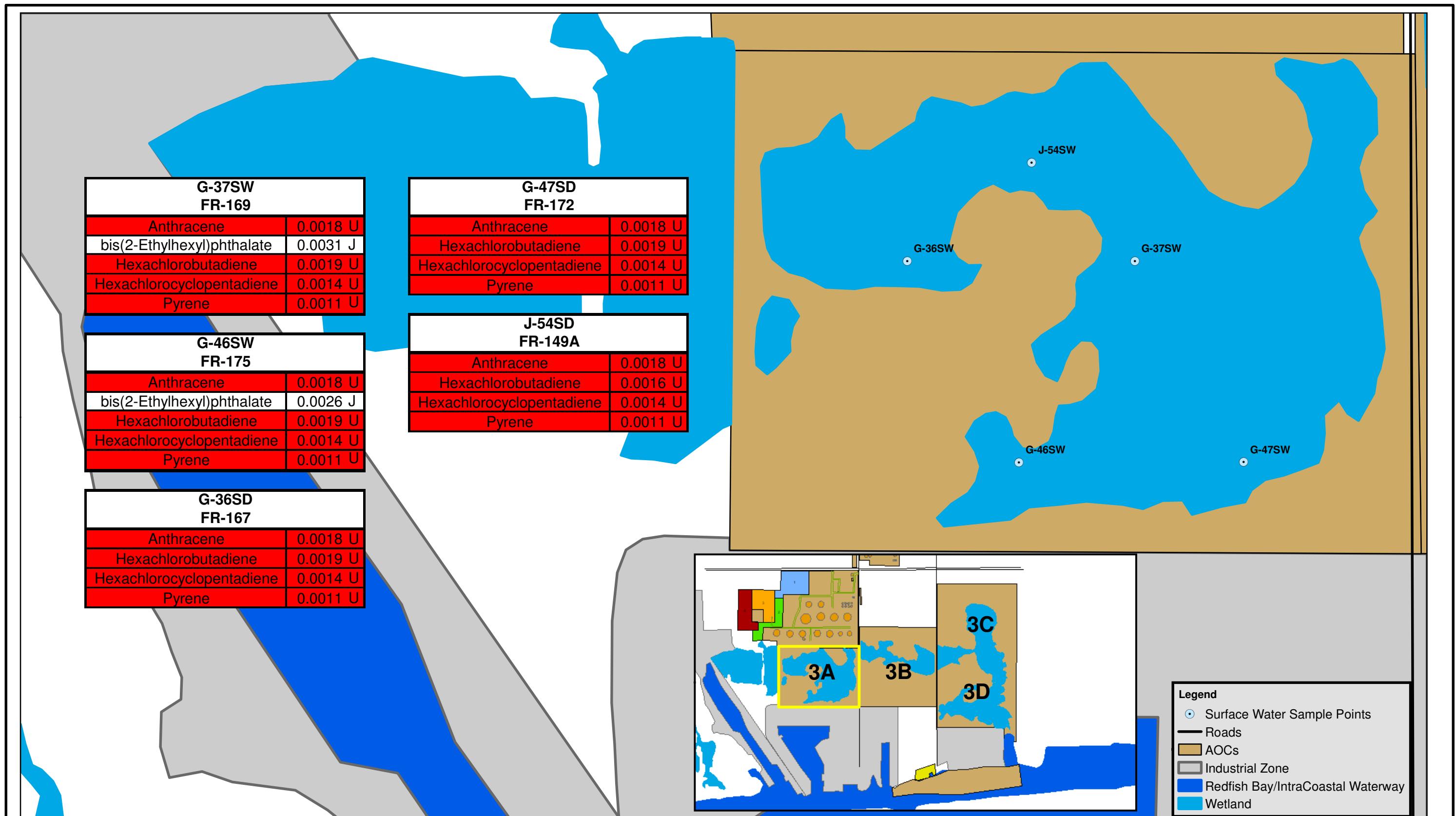
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



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FIGURE  
**30D**



**Notes:**

1. Results are posted in mg/l

Exceeds Marine Screening Level

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 100 200  
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-3A  
Ecological  
SVOC Surface Water Distribution Map**

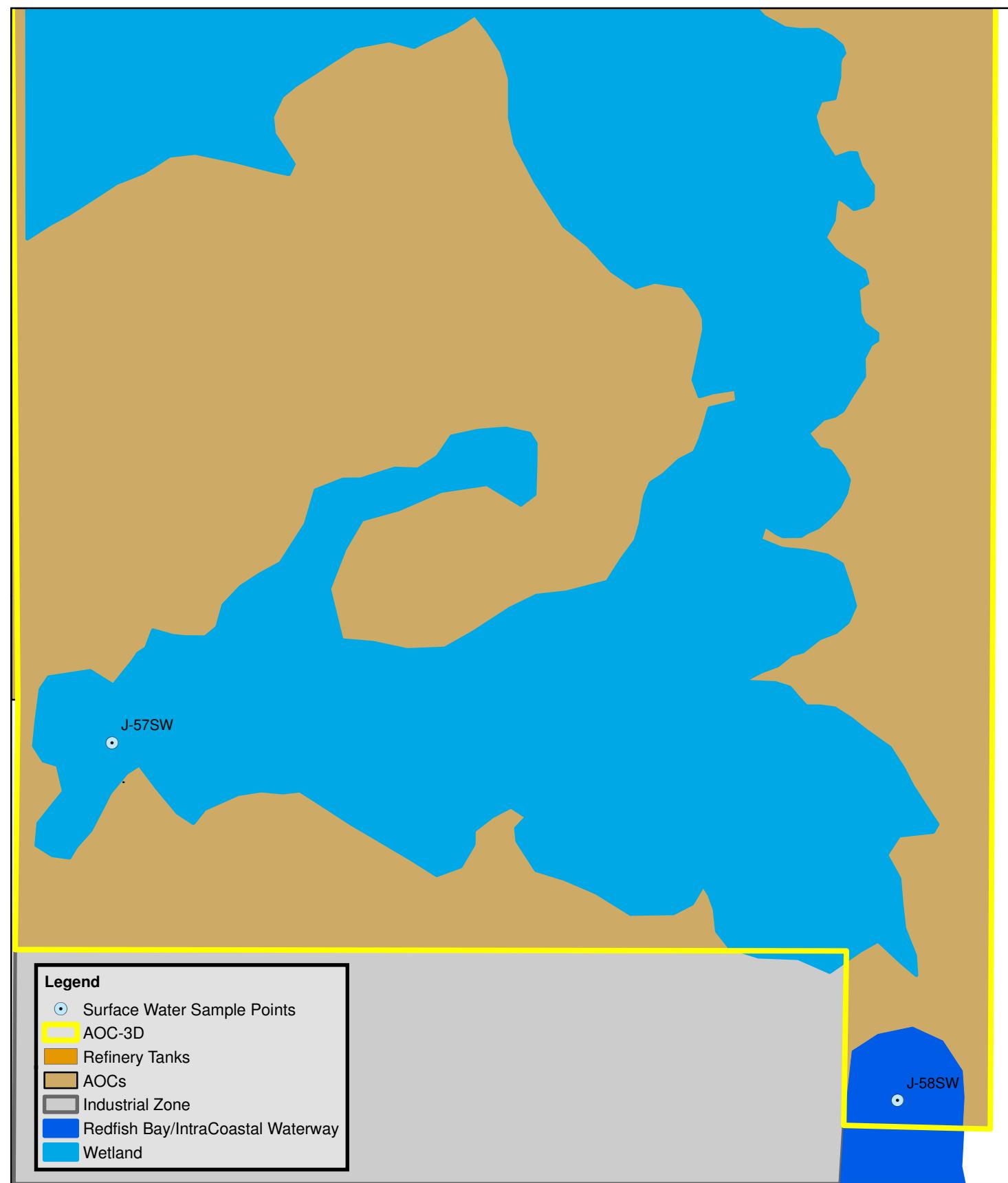
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

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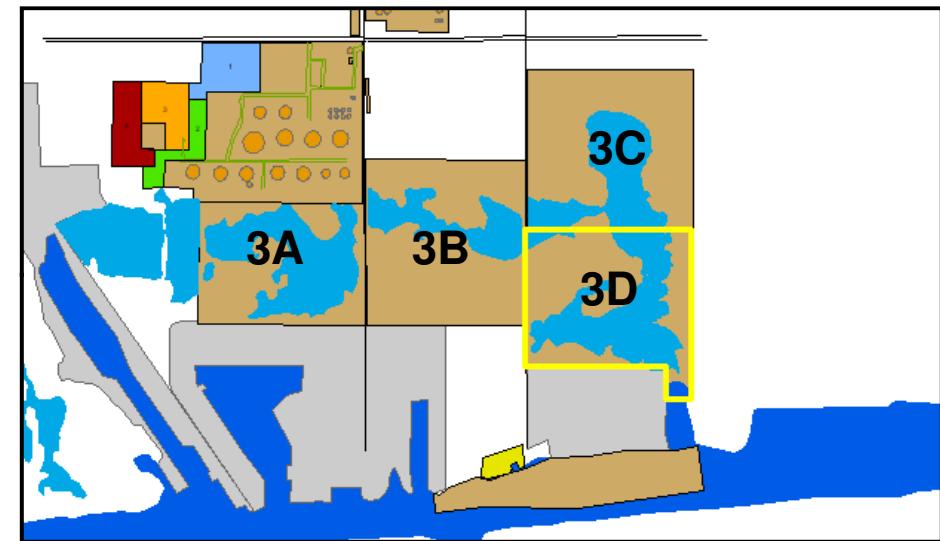
FIGURE

**30E**



J-57SW FR-211	
Anthracene	0.0018 U
bis(2-Ethylhexyl)phthalate	0.0026 J
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

J-58SD FR-217	
Anthracene	0.0018 U
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

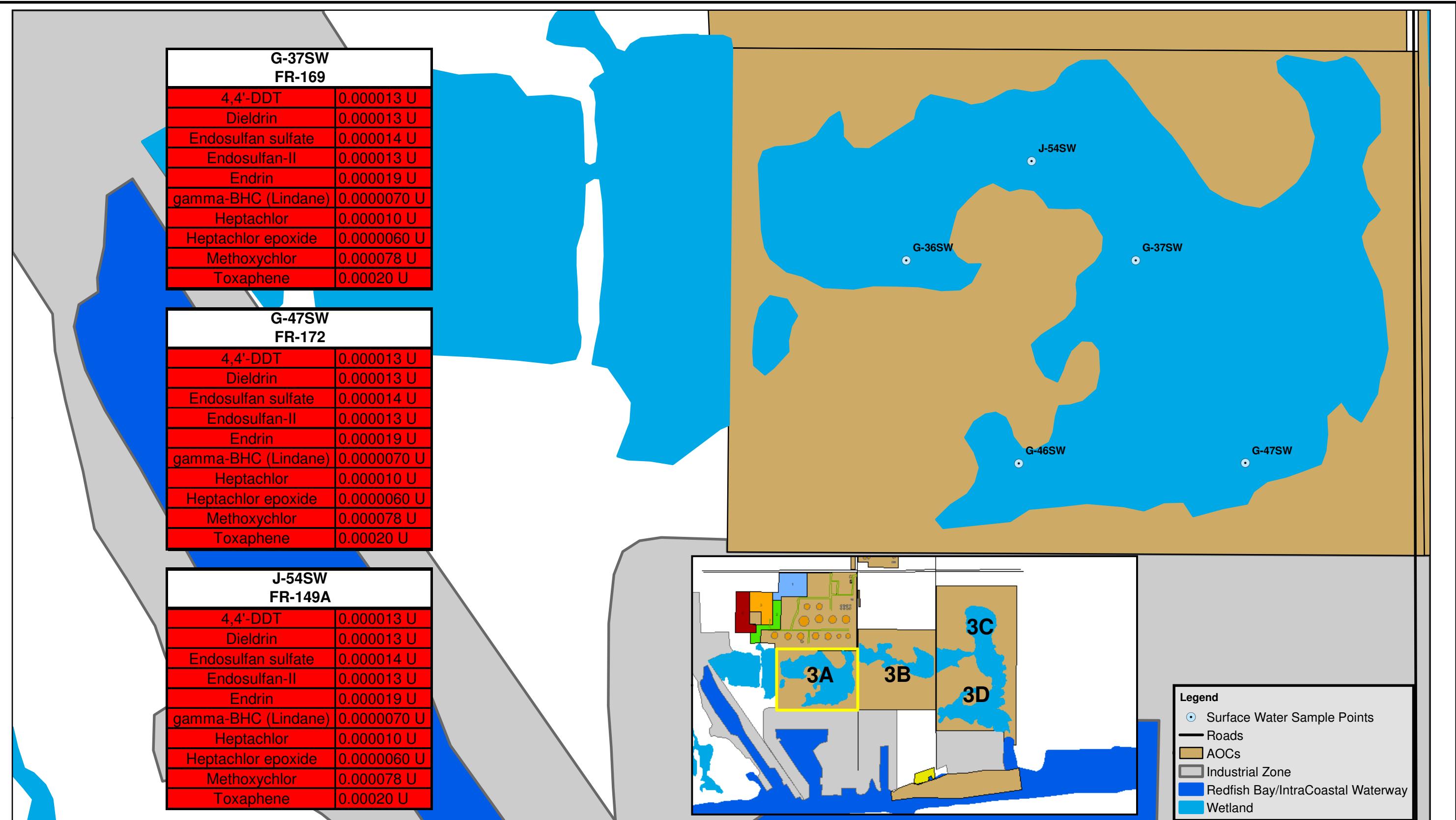


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DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

**AOC-3D Ecological SVOC Surface Water Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in mg/l

Exceeds Marine Screening Level

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)



0    100    200  
Feet

DATE DRAWN: 7/8/08    DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-3A  
Ecological  
Pesticide Surface Water Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

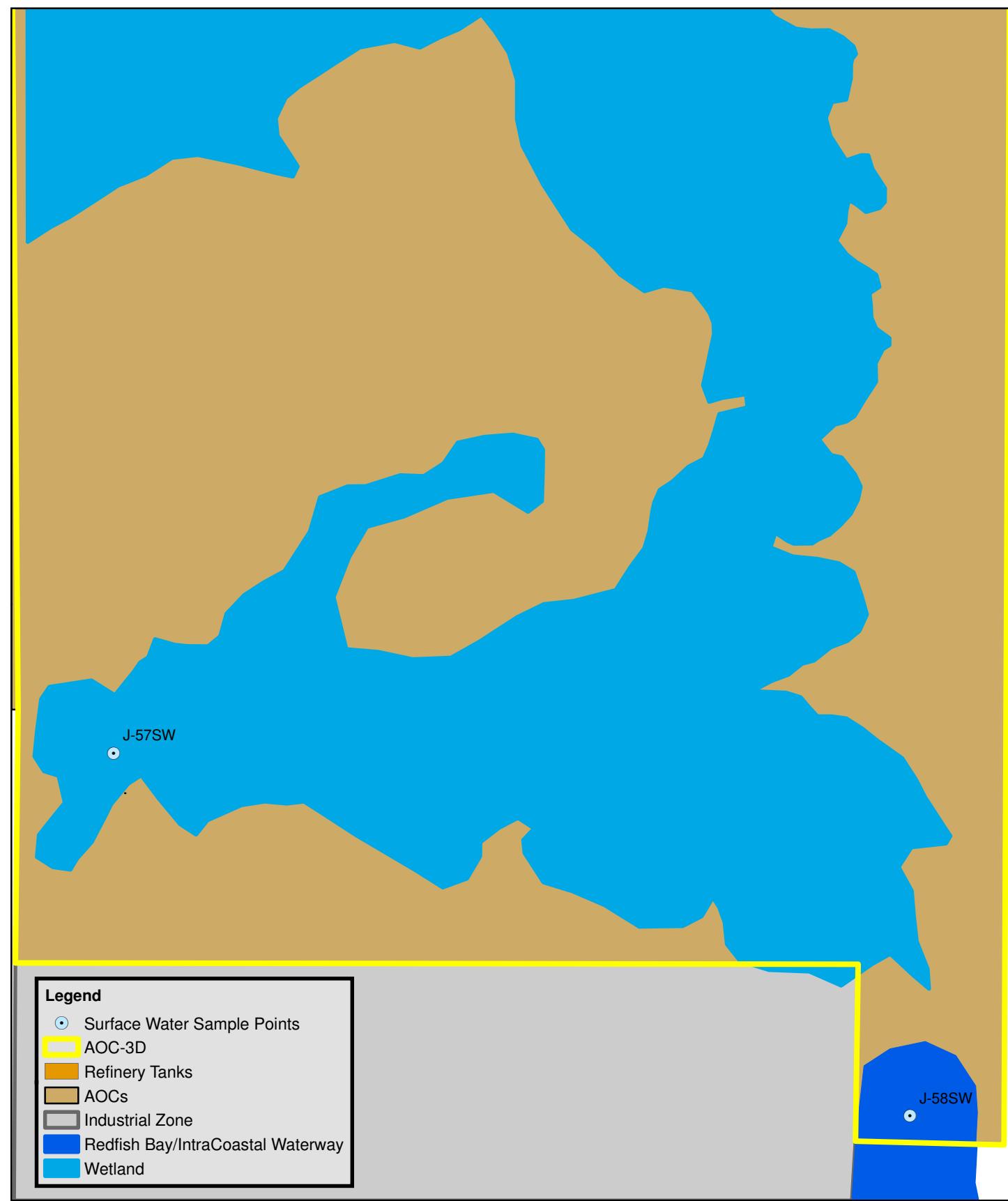
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FIGURE

**30G**



**Notes:**

- Results are posted in mg/l
- Qualifiers:  
U = Undetected at the sample detection limit (SDL)

**Exceeds Marine Screening Level**

0 100 200  
Feet

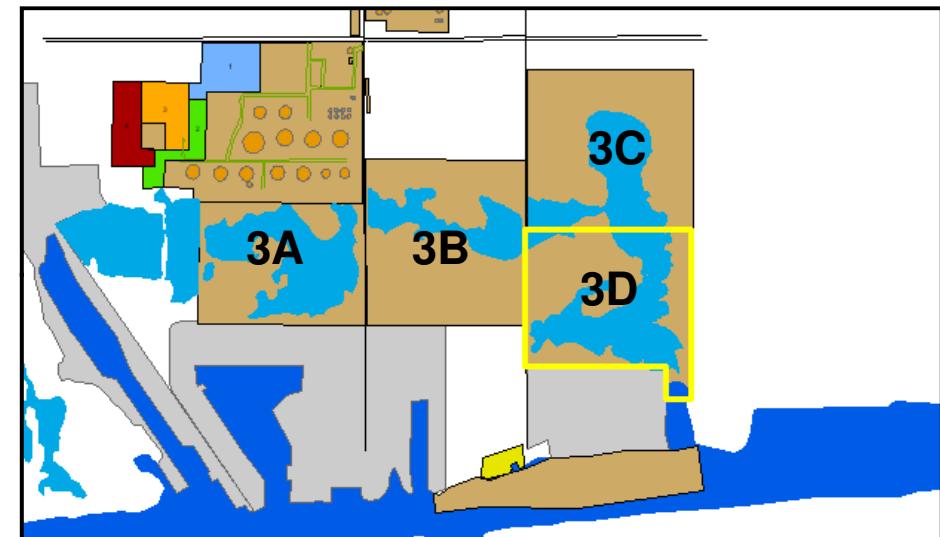


DATE DRAWN:	DATE REVISED:
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DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

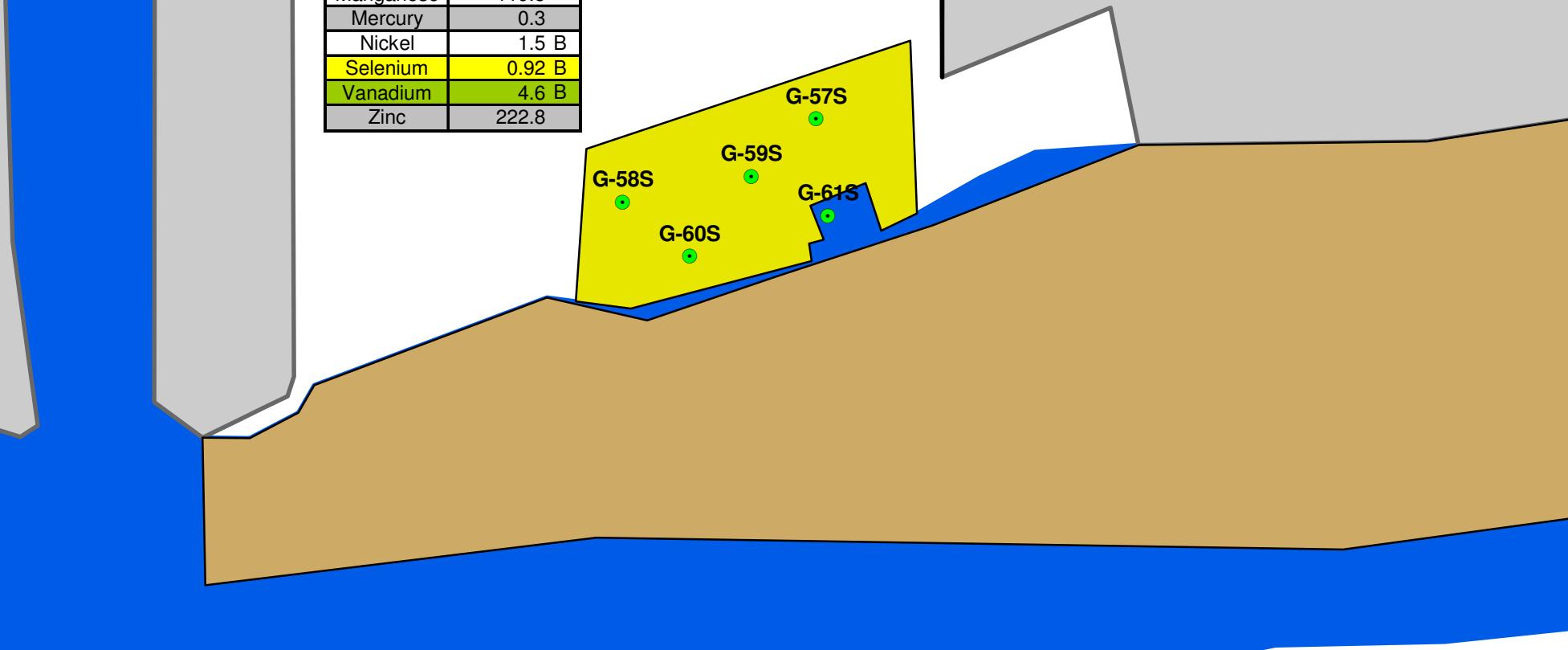
**AOC-3D  
Ecological  
Pesticide Surface Water Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

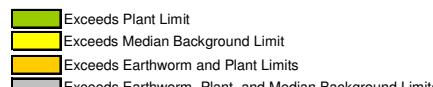


Composite 5 FR-133A	
Aluminum	3090
Antimony	0.475 B
Arsenic	2.7
Barium	446.5
Beryllium	0.18 B
Cadmium	0.27 B
Chromium	4.55
Cobalt	0.935 B
Copper	5.3
Iron	2975
Lead	39.65
Manganese	119.5
Mercury	0.3
Nickel	1.5 B
Selenium	0.92 B
Vanadium	4.6 B
Zinc	222.8



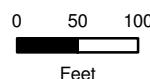
**Notes:**

1. Results are posted in mg/kg



2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



DATE DRAWN:	DATE REVISED:
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APPROVED BY:	
PROJ NO.	FILE NAME:
59752	Falcon Refinery Base Map

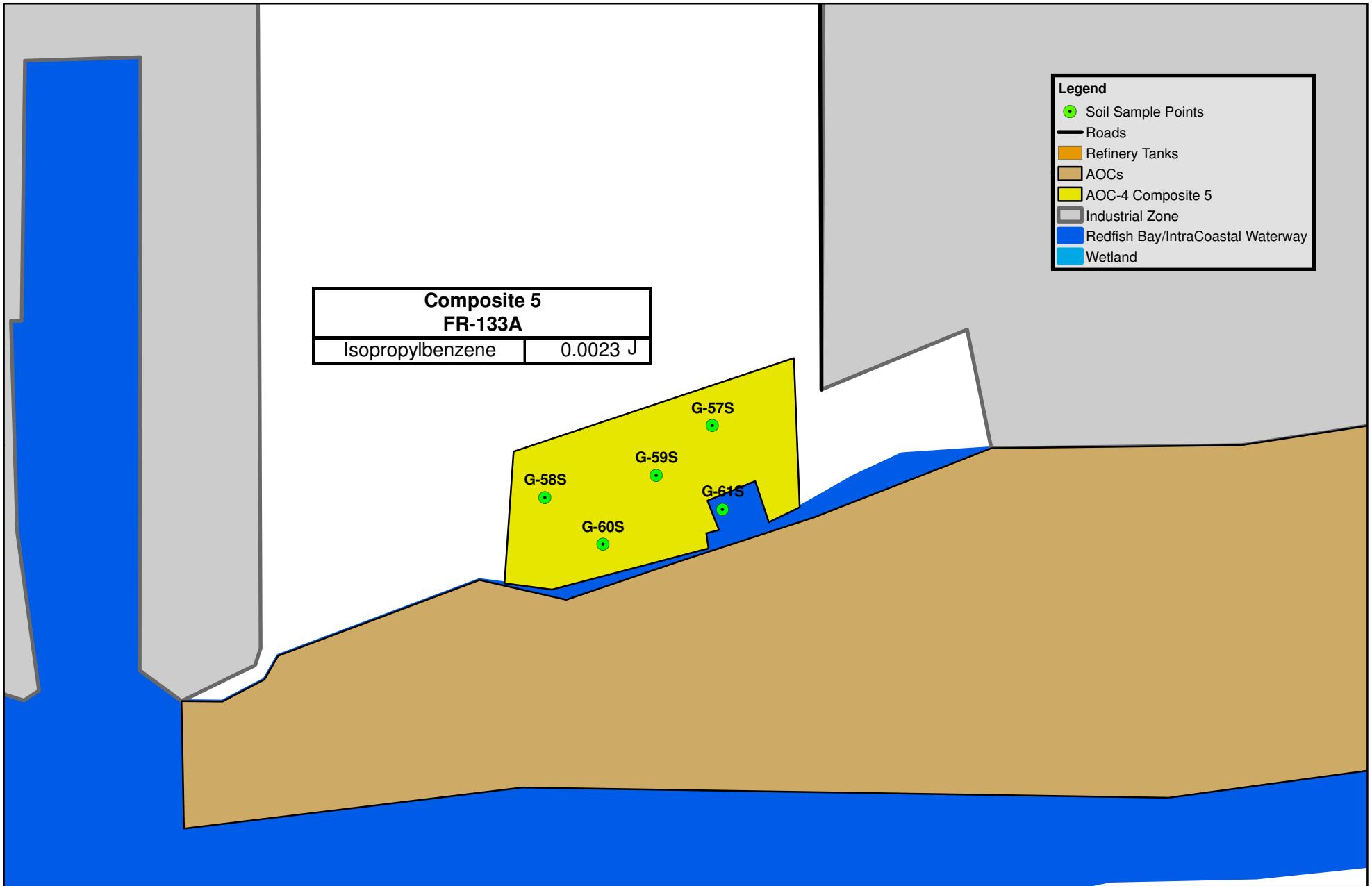
**AOC-4  
Ecological  
Metal Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS



FIGURE

**31A**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 50 100  
Feet

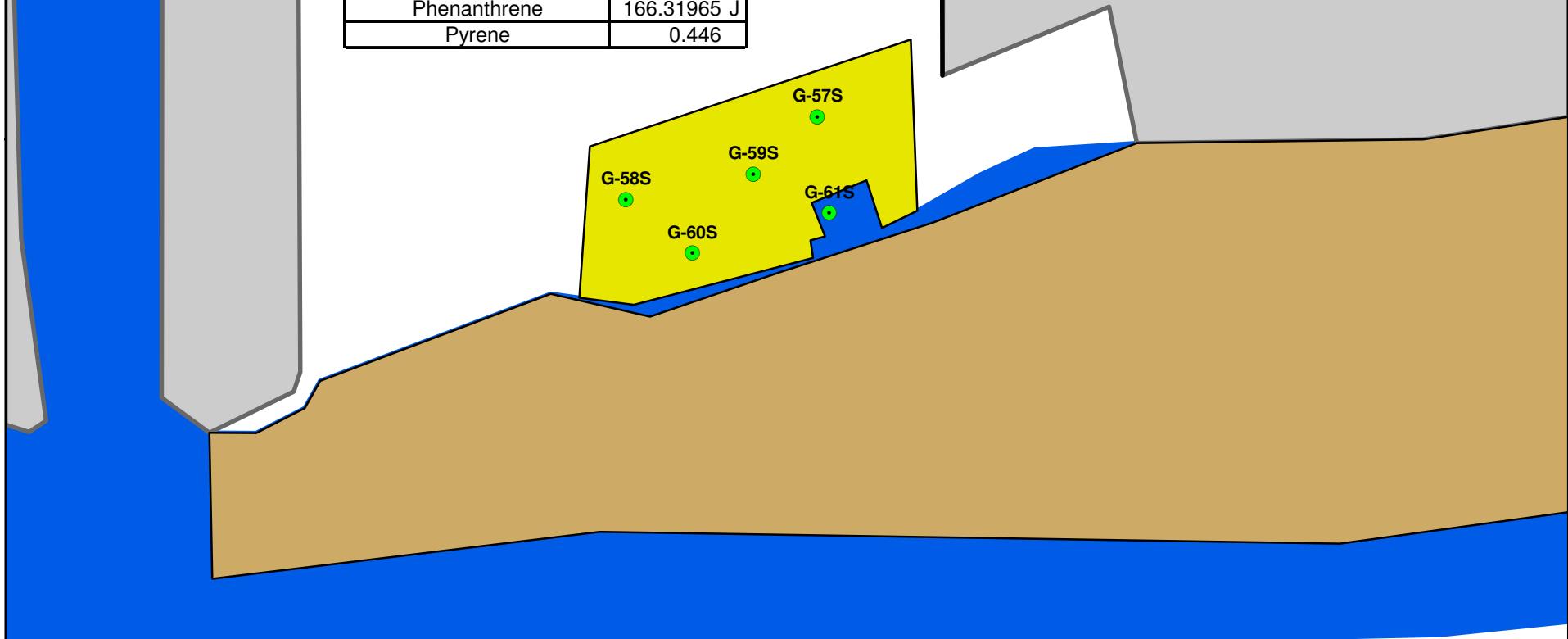
DATE DRAWN:	DATE REVISED:
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DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

**AOC-4  
Ecological  
VOC Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

Composite 5 FR-13A	
Benzo(a)anthracene	0.1525
Benzo(a)pyrene	0.167
Benzo(b)fluoranthene	0.222
Benzo(g,h,i)perylene	0.219
Benzo(k)fluoranthene	0.08675 J
bis(2-Ethylhexyl)phthalate	0.141 J
Chrysene	0.209
Fluoranthene	0.203
Indeno(1,2,3-cd)pyrene	0.167 J
Phenanthrene	166.31965 J
Pyrene	0.446



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 50 100  
Feet

DATE DRAWN: DATE REVISED:

5/7/08

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

**AOC-4  
Ecological  
SVOC Surface Soil Distribution Map**

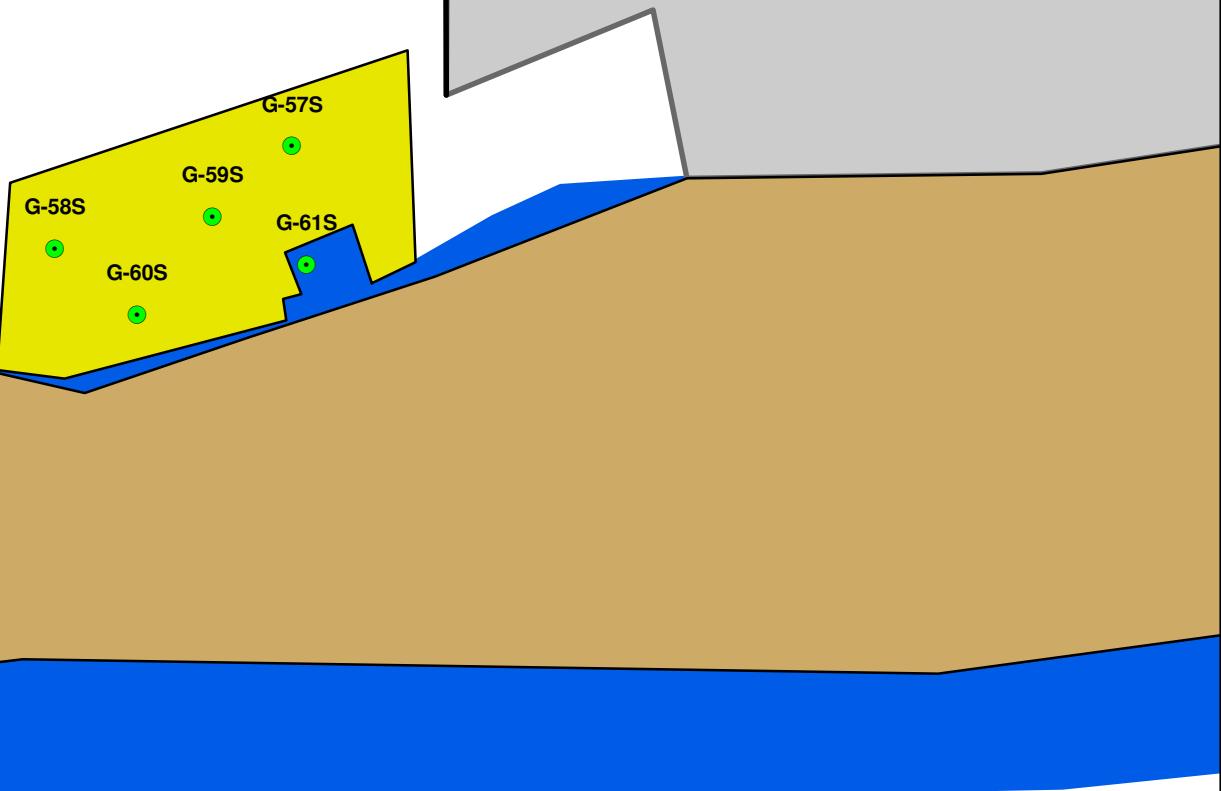
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FIGURE

**31C**

Composite 5 FR-135	
Aluminum	3790
Arsenic	0.94 B
Barium	11.5 B
Beryllium	0.24 B
Chromium	4.4
Cobalt	0.52 B
Copper	1.6 B
Iron	2520
Lead	2.9
Manganese	28.2
Mercury	0.0098 B
Nickel	1.4 B
Selenium	0.29 B
Vanadium	5.7 B
Zinc	7.5



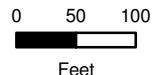
**Notes:**

1. Results are posted in mg/kg



2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



DATE DRAWN: 5/7/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-4  
Ecological  
Metal Subsurface Soil Distribution Map**

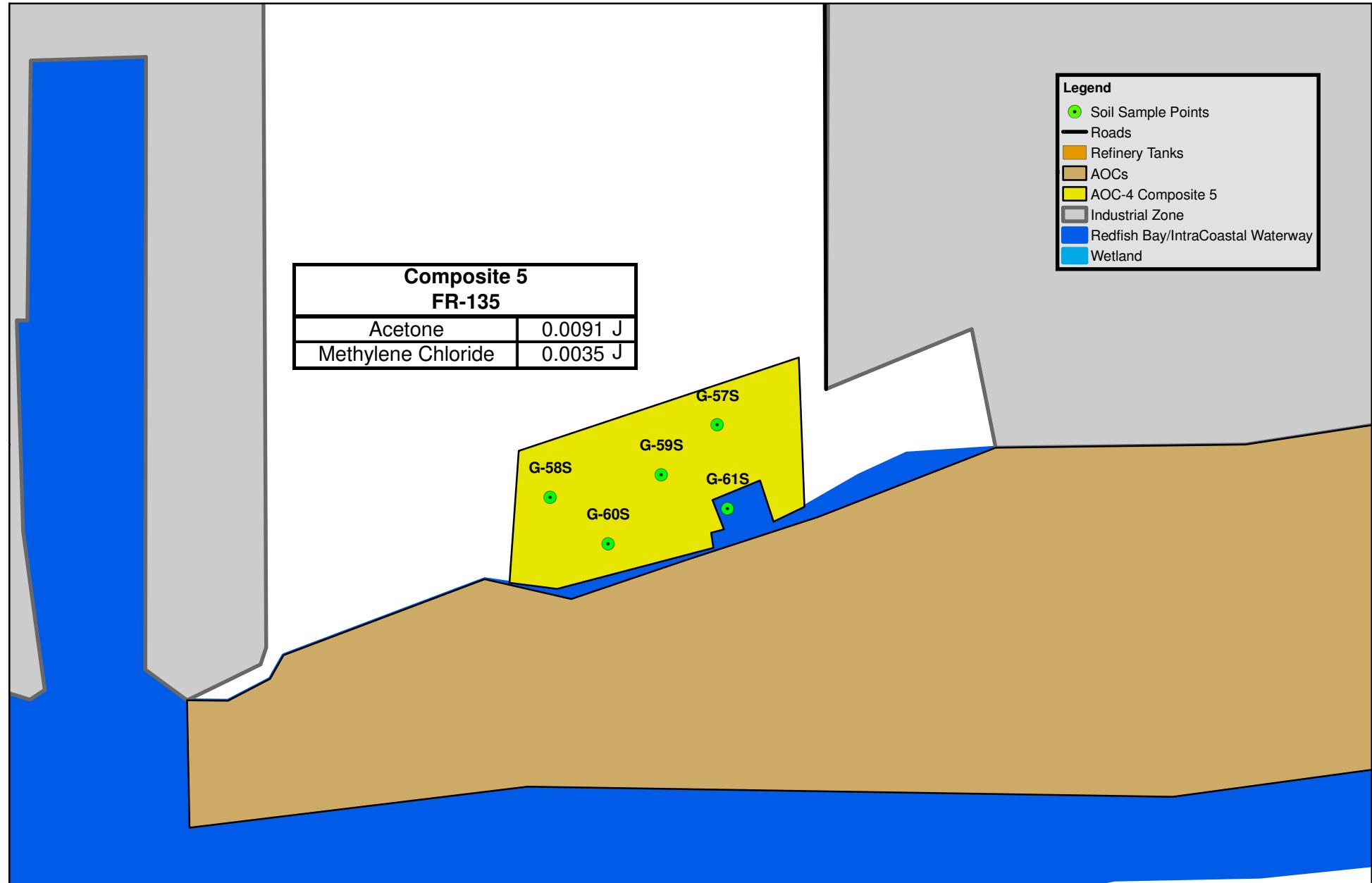
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



FIGURE

**32A**



Notes:

1. Results are posted in mg/kg

2. Qualifiers:

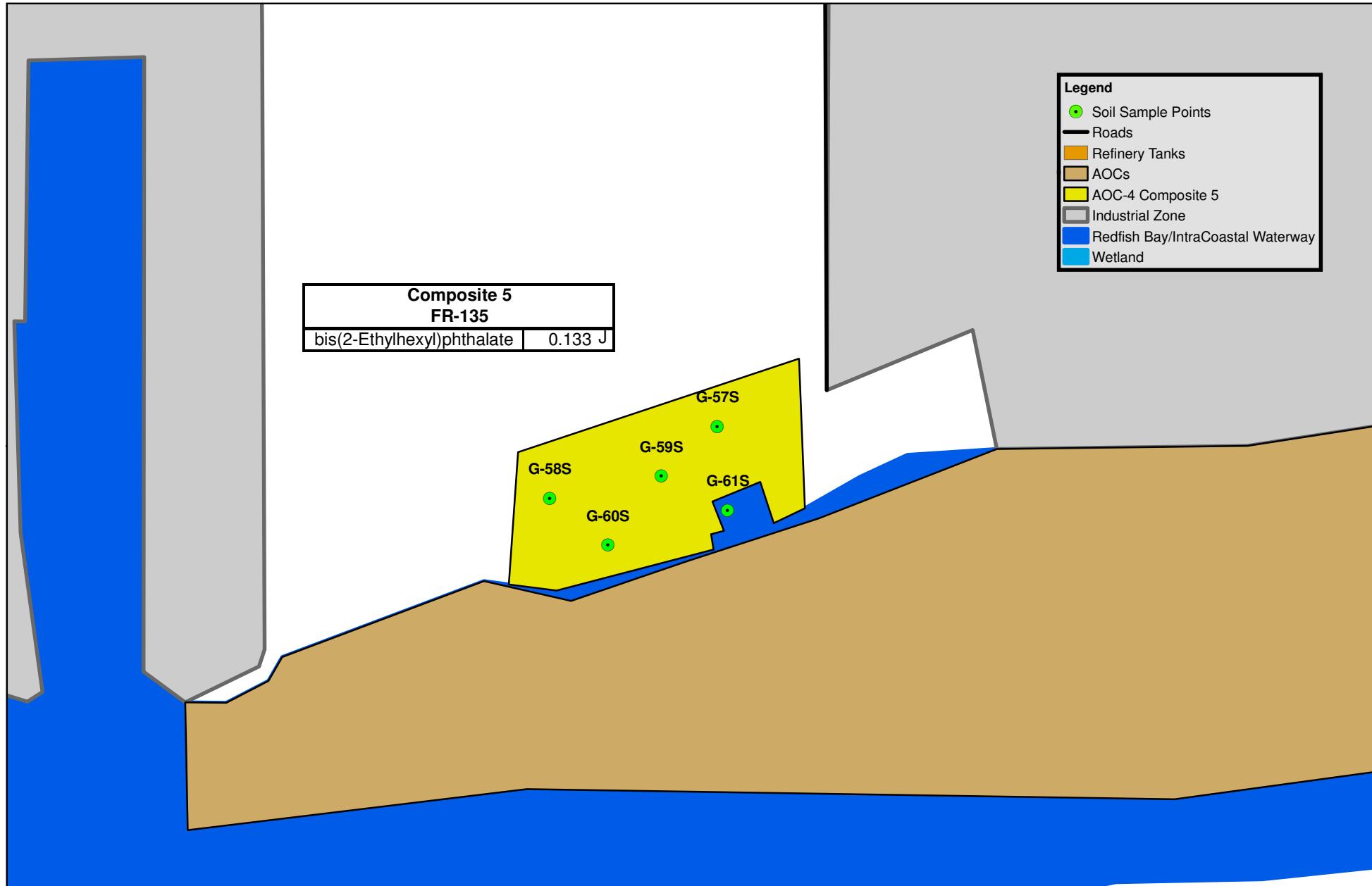
J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 50 100  
Feet

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APPROVED BY:	
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PROJ NO. 59752	FILE NAME: Falcon Refinery Base Map

**AOC-4  
Ecological  
VOC Subsurface Soil Distribution Map**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 50 100  
Feet

DATE DRAWN: 5/7/08 DATE REVISED:

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CHECKED BY: S. HALASZ

APPROVED BY:

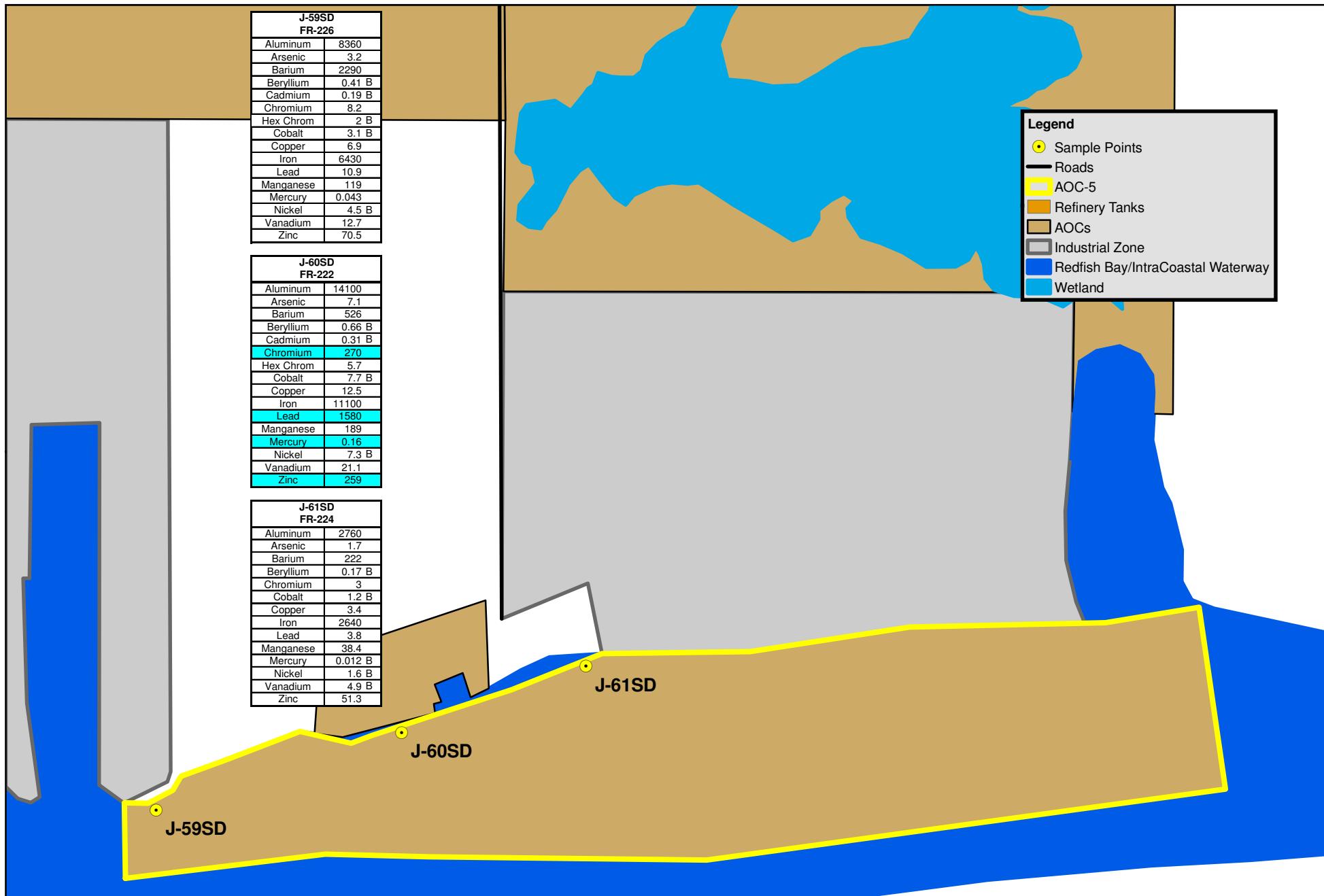
**AOC-4  
Ecological  
SVOC Subsurface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS  
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

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**FIGURE**

**32C**



**Notes:**

1. Results are posted in mg/kg

Above Sediment Marine Limit

2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 100 200  
Feet

DATE DRAWN: 5/7/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-5 Ecological Metal Sediment Distribution Map**

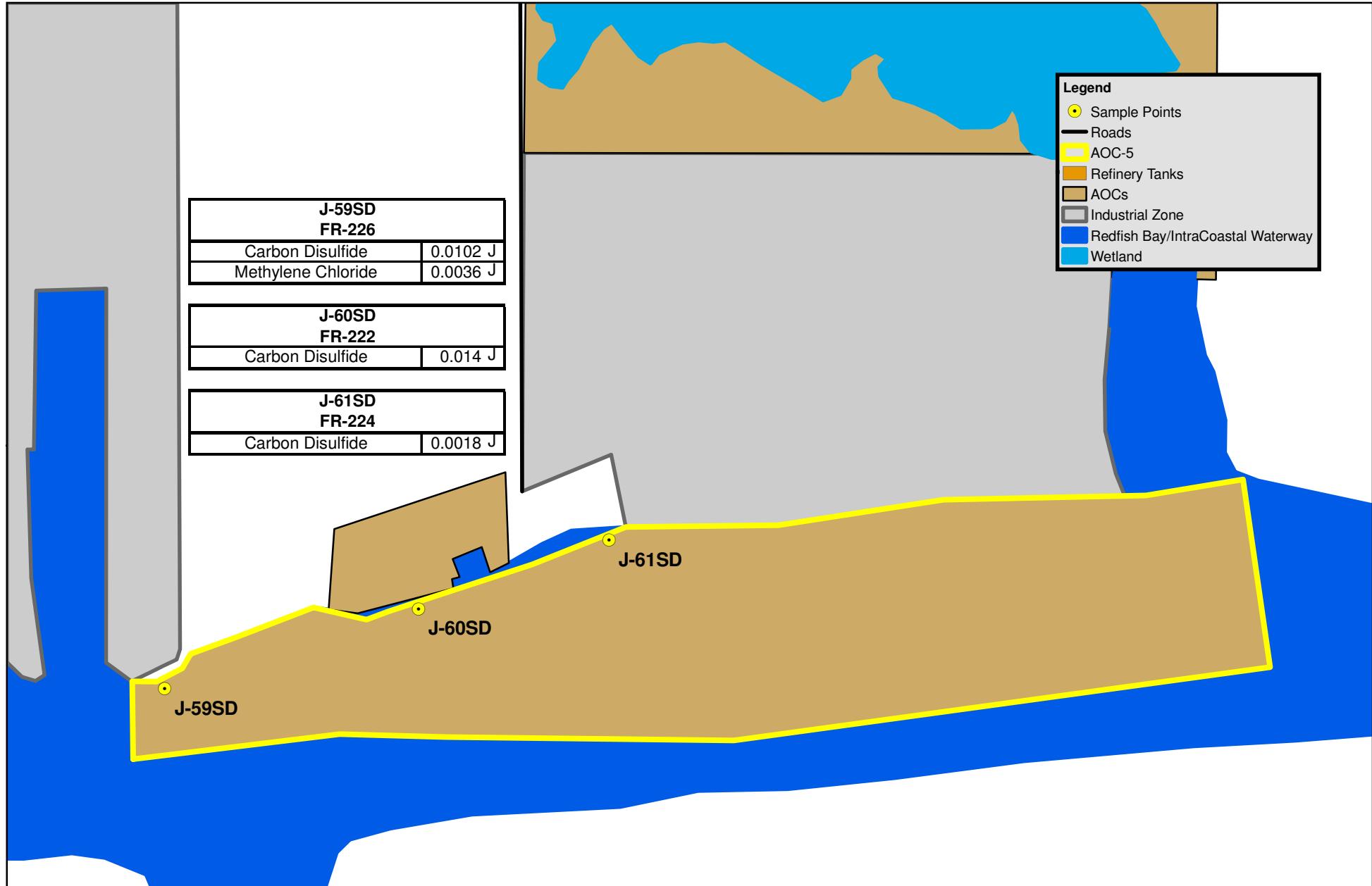
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

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FIGURE

**33A**



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

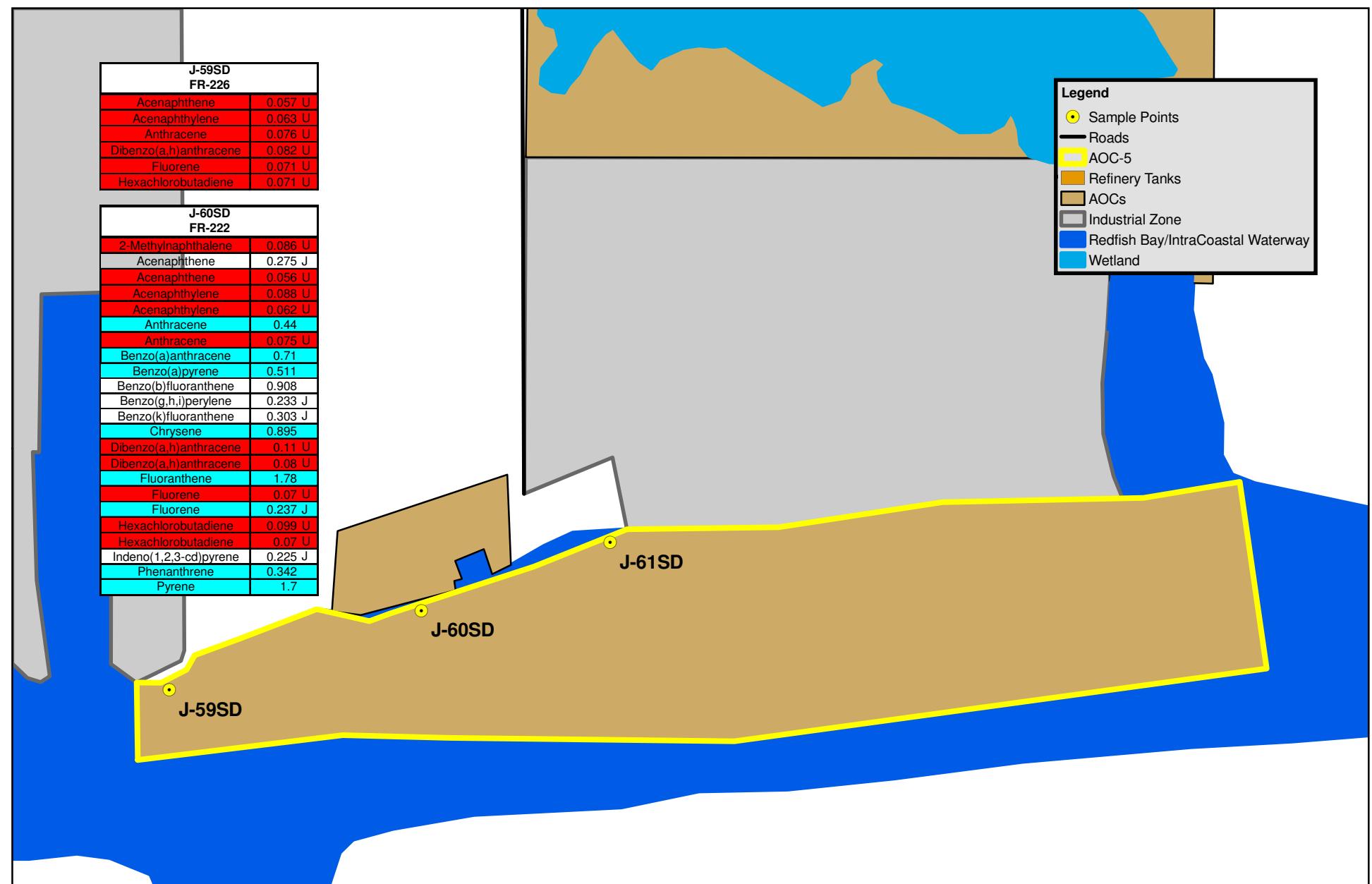
J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0 110 220  
Feet

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CHECKED BY: S. HALASZ	
APPROVED BY:	
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map	

**AOC-5 Ecological VOC Sediment Distribution Map**  
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS



**Notes:**

1. Results are posted in mg/kg

  Above Sediment Marine Limit

2. Qualifiers:

  Exceeds Sediment Marine Screening Level

U = Undetected at the sample detection limit (SDL)

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



0    80    160  
Feet

DATE DRAWN: 5/7/08    DATE REVISED:

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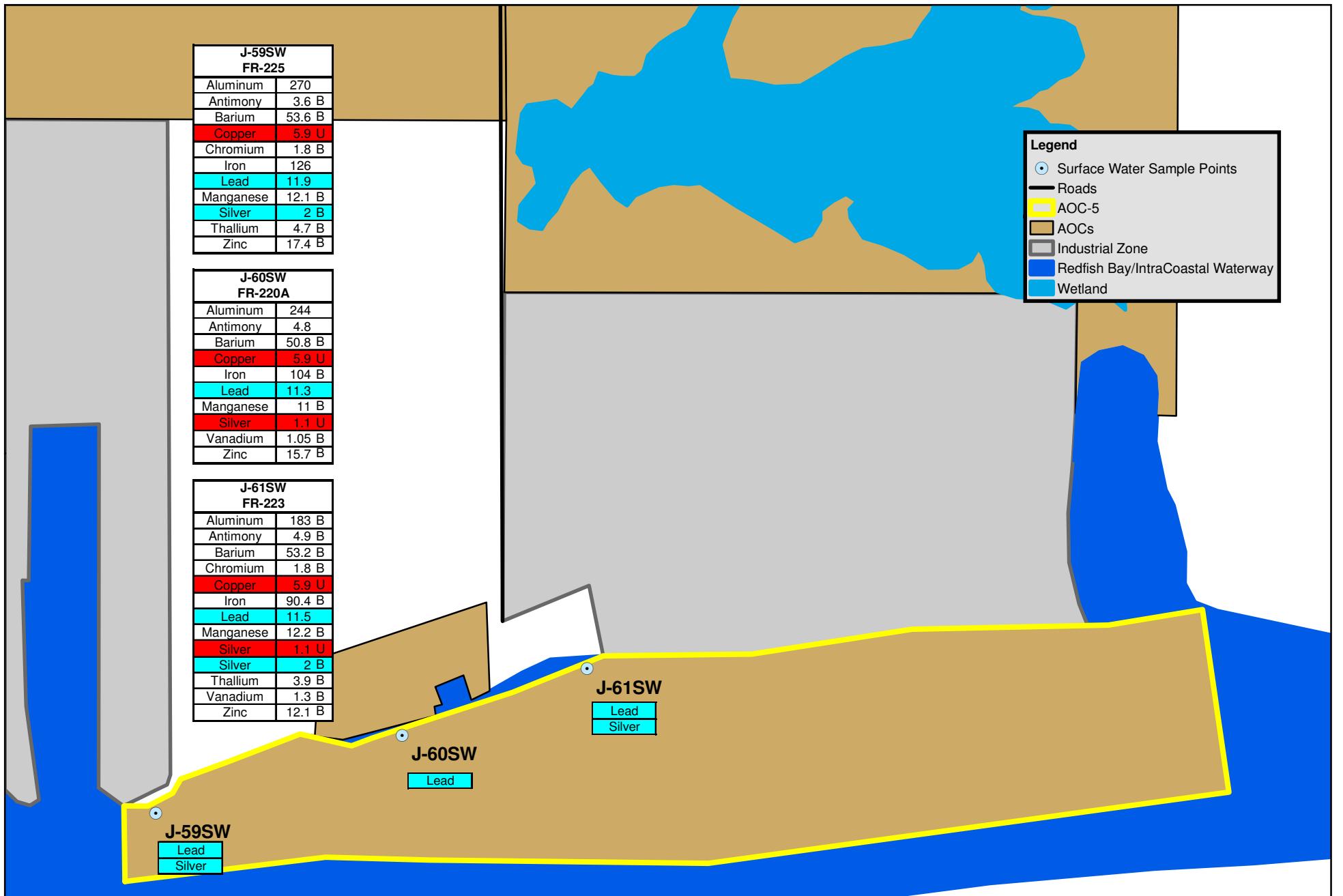
CHECKED BY: S. HALASZ

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**AOC-5  
Ecological  
SVOC Sediment Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752    FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in  $\mu\text{g/l}$

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Marine Limit

Exceeds Marine Screening Level



0 100 200  
Feet

DATE DRAWN: 5/7/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-5 Ecological Metal Surface Water Distribution Map**

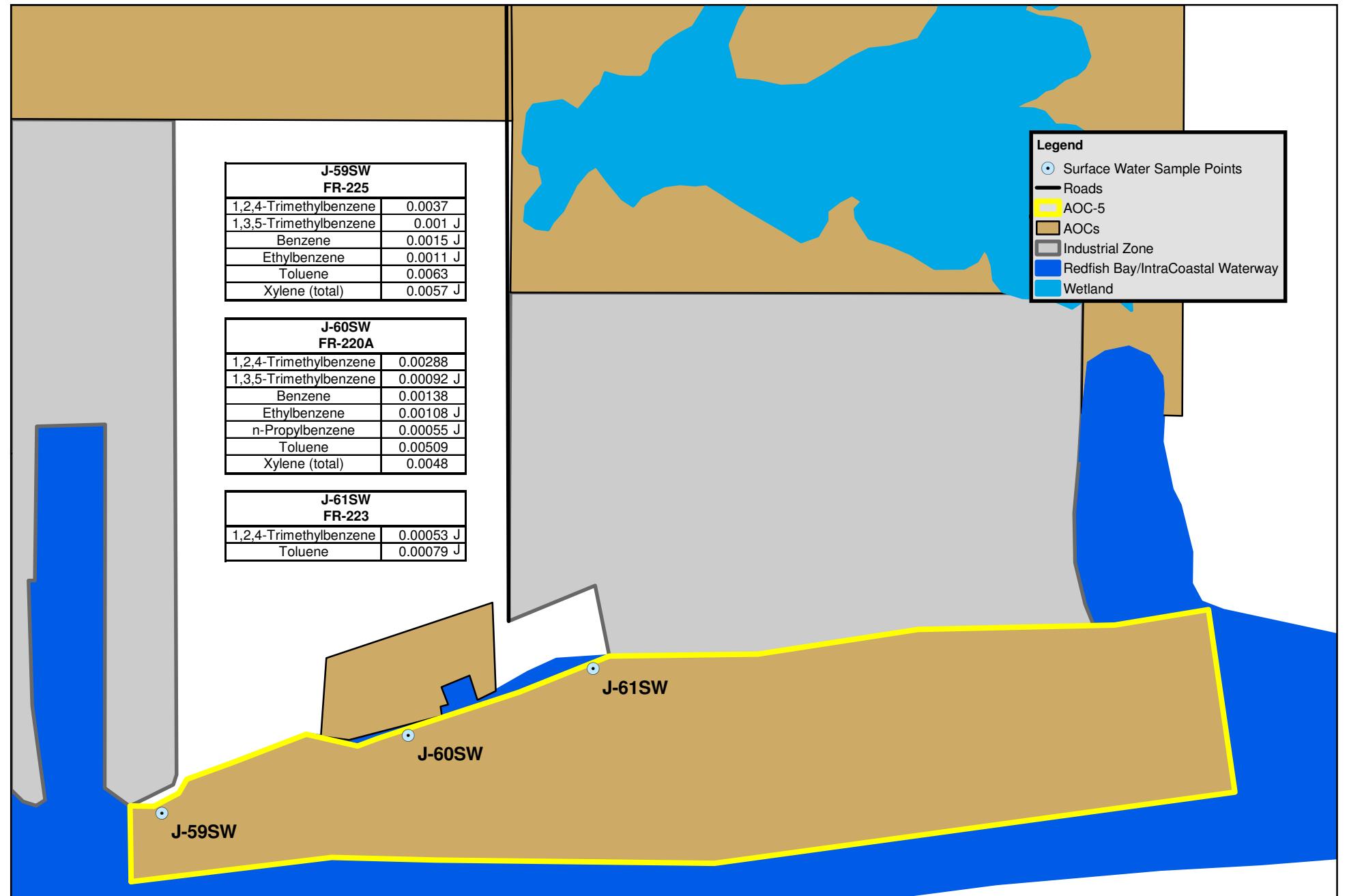
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

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FIGURE

**34A**



**Notes:**

1. Results are posted in mg/l

2. Qualifiers:

J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 100 200  
Feet

DATE DRAWN: 5/7/08 DATE REVISED:

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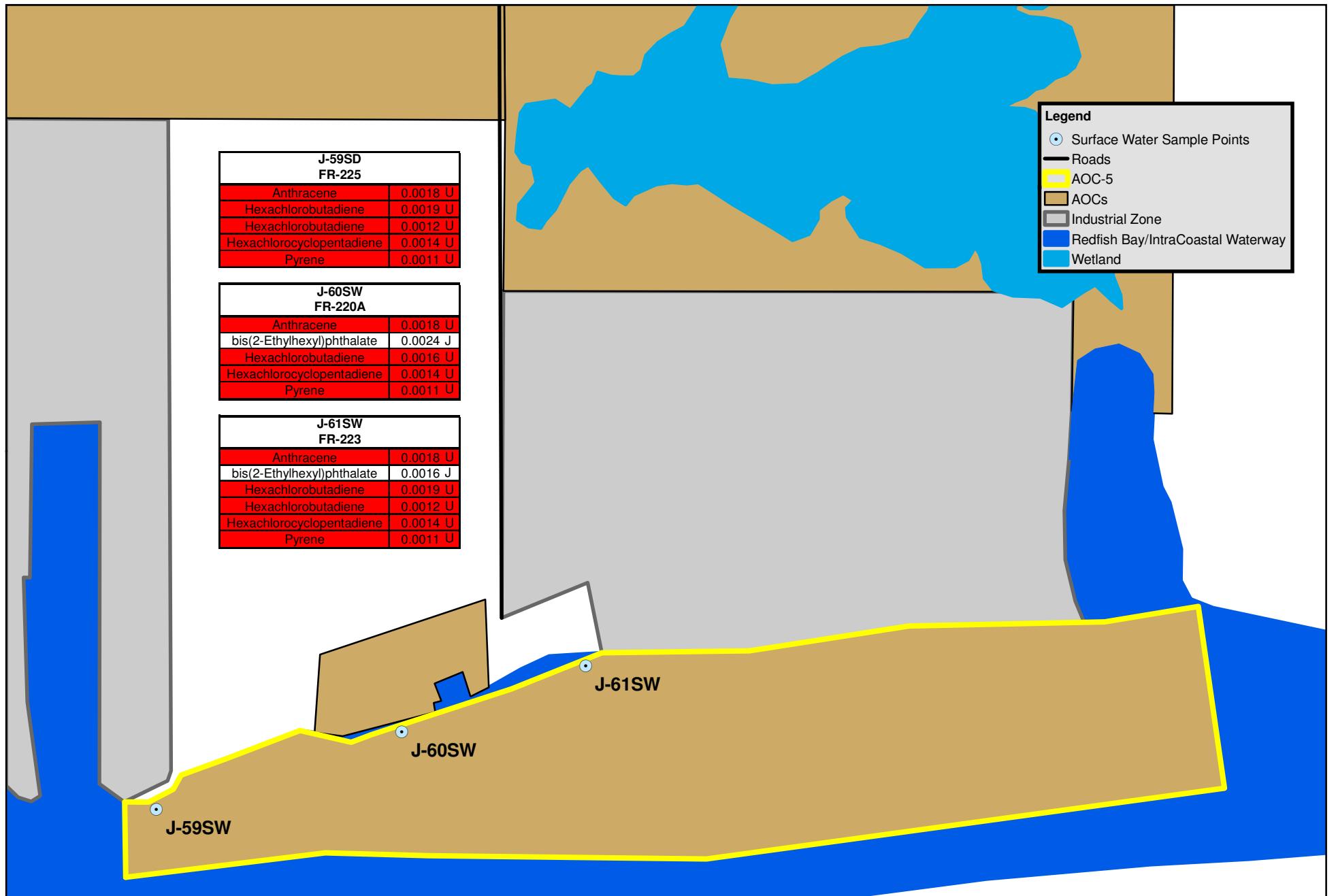
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**AOC-5 Ecological VOC Surface Water Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in mg/l

2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Marine Screening Level



0 100 200  
Feet

DATE DRAWN: 5/7/08 DATE REVISED:

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CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-5 Ecological SVOC Surface Water Distribution Map**

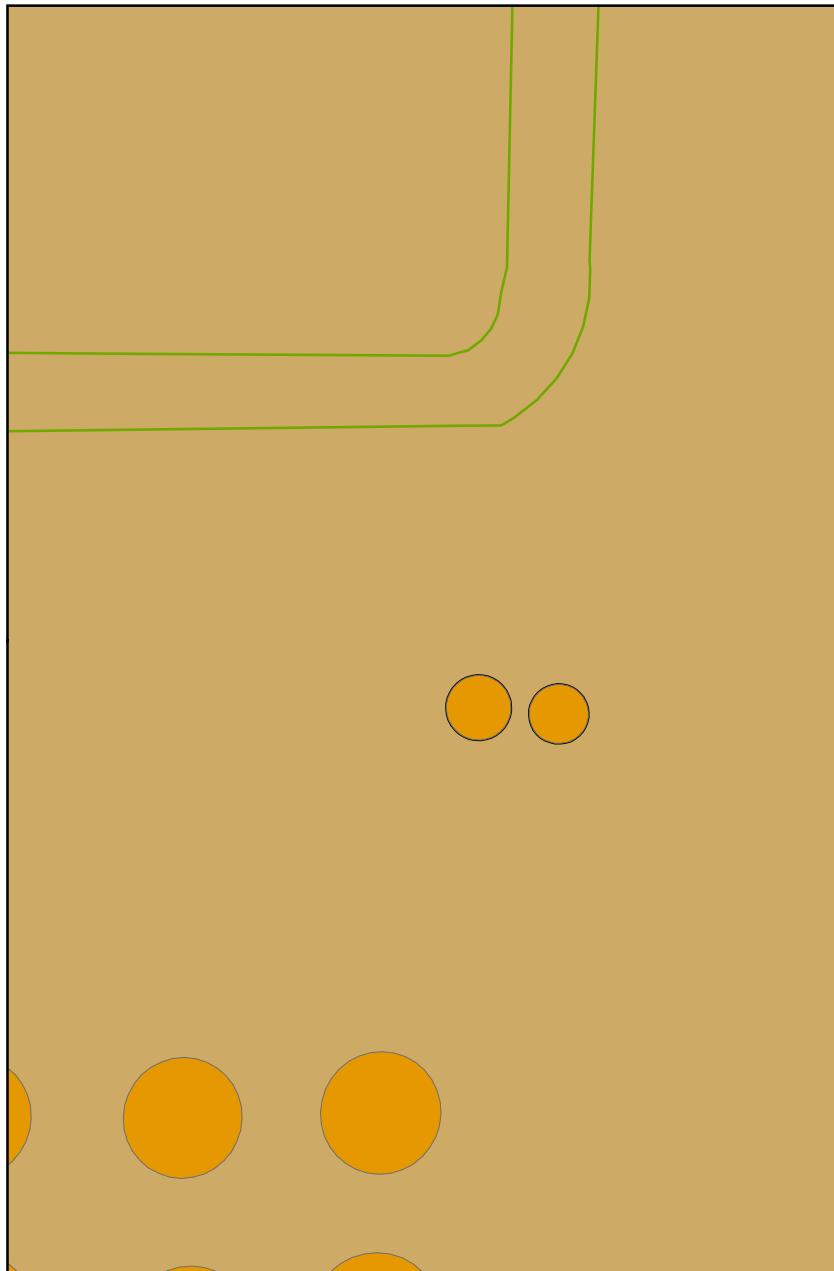
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

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FIGURE

**34C**



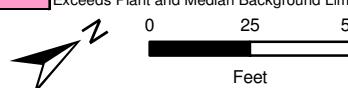
**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- [Green Box] Exceeds Plant Limit
- [Yellow Box] Exceeds Median Background Limit
- [Yellow Box] Exceeds Earthworm and Plant Limits
- [Purple Box] Exceeds Earthworm and Median Background Limits
- [Pink Box] Exceeds Plant and Median Background Limits



DATE DRAWN: 5/7/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-6 Ecological Metal Surface Soil Distribution Map**

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

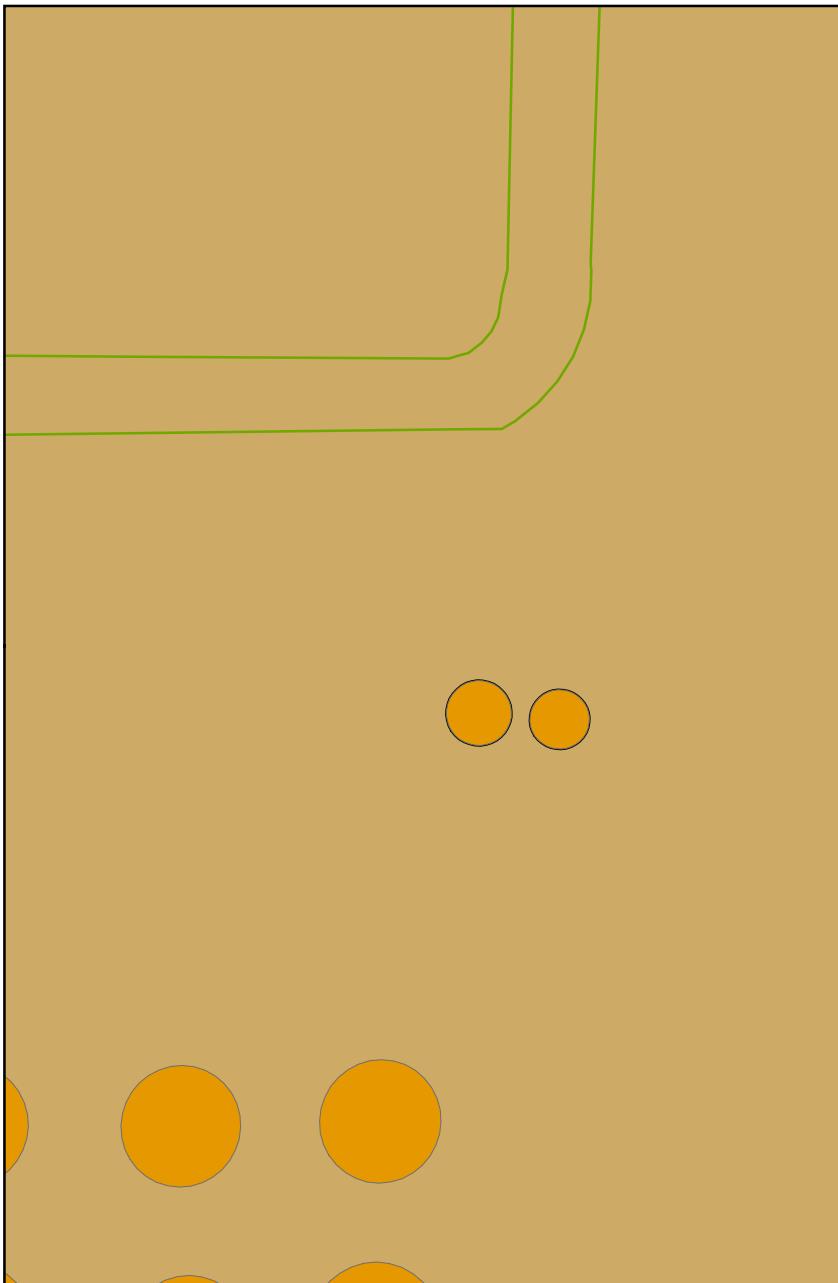
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

J-62S FR-234A	
Aluminum	11750
Arsenic	1.5
Barium	259
Beryllium	0.495
Cadmium	0.17 B
Chromium	12.25
Cobalt	2.75 B
Copper	8.45
Iron	7025
Lead	8.6
Manganese	180
Mercury	0.00405 B
Nickel	6
Selenium	0.795 B
Vanadium	19.45
Zinc	71.25

J-63S FR-231	
Aluminum	9190
Arsenic	2.4
Barium	280
Beryllium	0.43 B
Cadmium	0.13 B
Chromium	10.8
Cobalt	2.4 B
Copper	9.1
Iron	6580
Lead	7.1
Manganese	133
Mercury	0.0067 B
Nickel	7.5
Selenium	0.78 B
Vanadium	32.5
Zinc	69.3

J-64S FR-228	
Aluminum	10600
Arsenic	2.8
Barium	400
Beryllium	0.45 B
Cadmium	0.16 B
Chromium	15.3
Cobalt	2.7 B
Copper	14.6
Iron	7630
Lead	16.5
Manganese	157
Mercury	0.0094 B
Nickel	7.2
Selenium	1.2
Vanadium	20.6
Zinc	111

- Legend**
- Soil Sample Points
  - Roads
  - Gravel/Dirt Road
  - AOC-6
  - Refinery Tanks
  - AOCs



J-62S  
FR-234A  
J-63S  
FR-231  
J-64S  
FR-228

<b>J-62S</b>	
<b>FR-234A</b>	
Acetone	0.0094 J
Methylene Chloride	0.00295 J
<b>J-63S</b>	
<b>FR-231</b>	
Methylene Chloride	0.0028 J
<b>J-64S</b>	
<b>FR-228</b>	
Methylene Chloride	0.003 J

- Legend**
- Soil Sample Points
  - Roads
  - Gravel/Dirt Road
  - AOC-6
  - Refinery Tanks
  - AOCs

**Notes:**

1. Results are posted in mg/kg



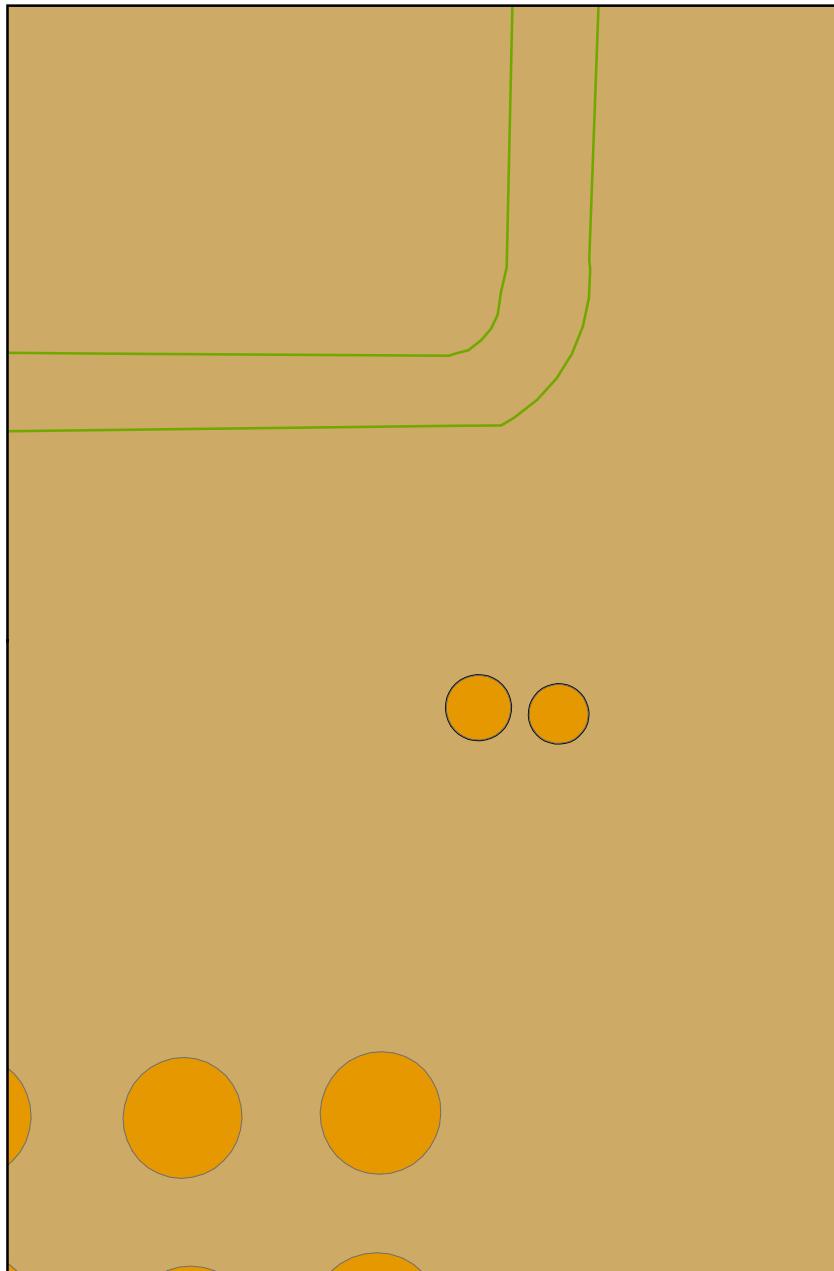
0 25 50  
Feet

DATE DRAWN:	DATE REVISED:
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DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

**AOC-6**  
**Ecological**  
**VOC Surface Soil Distribution Map**

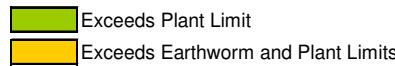
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



**Notes:**

1. Results are posted in mg/kg



2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

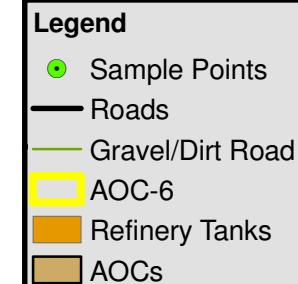


0 25 50  
Feet

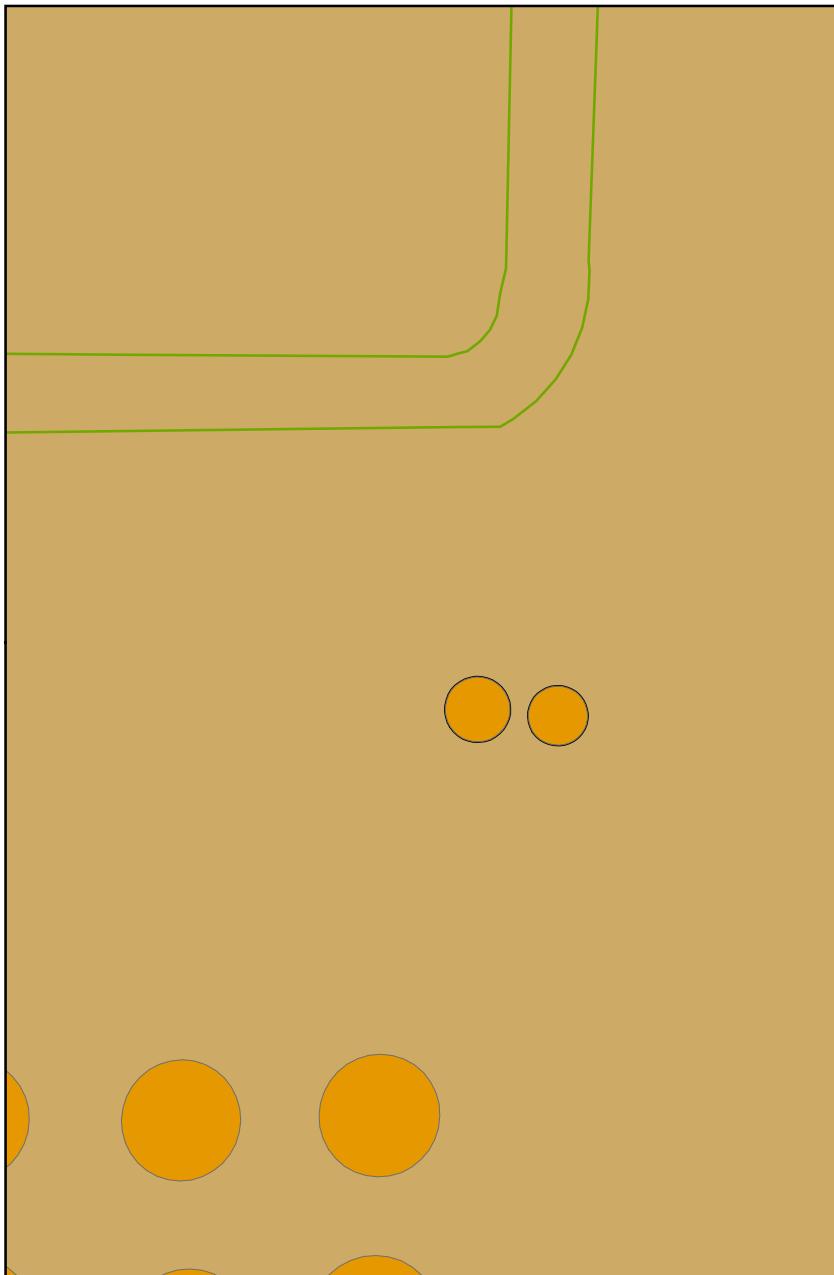
J-62S FR-236	
Aluminum	2660
Barium	21.5 B
Beryllium	0.14 B
Chromium	2.1
Cobalt	0.2 B
Copper	1.2 B
Iron	956
Lead	2.6
Manganese	5.2
Mercury	0.025
Nickel	0.39 B
Vanadium	2.4 B
Zinc	3.7

J-63S FR-232	
Aluminum	4340
Arsenic	0.35 B
Barium	39.6
Beryllium	0.22 B
Chromium	4
Cobalt	0.3 B
Copper	1.9 B
Iron	1500
Lead	3.1
Manganese	7.5
Mercury	0.0064 B
Nickel	0.74 B
Vanadium	3.6 B
Zinc	5.8

J-64S FR-229	
Aluminum	1420
Barium	20.1 B
Beryllium	0.075 B
Chromium	2.3
Hex Chrom	1.5 B
Copper	1.5 B
Iron	737
Lead	2.1
Manganese	4.5
Mercury	0.0083 B
Nickel	0.25 B
Vanadium	1.6 B
Zinc	3



DATE DRAWN: 5/7/08	DATE REVISED:	<b>AOC-6 Ecological Metal Subsurface Soil Distribution Map</b>	
DRAFTED BY: C. SEATON		FALCON REFINERY	
CHECKED BY: S. HALASZ		INGLESIDE, SAN PATRICIO COUNTY, TEXAS	
APPROVED BY:		PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map	



J-62S FR-236	
Acetone	0.0669
Methylene Chloride	0.0042 J

J-63S FR-232	
Acetone	0.0661
Methylene Chloride	0.004 J

J-64S FR-229	
Acetone	0.0183 J
Methylene Chloride	0.0033 J

- Legend**
- Soil Sample Points
  - Roads
  - Gravel/Dirt Road
  - AOC-6
  - Refinery Tanks
  - AOCs

Notes:

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)



DATE DRAWN: 5/7/08    DATE REVISED:  
DRAFTED BY: C. SEATON  
CHECKED BY: S. HALASZ  
APPROVED BY:

**AOC-6  
Ecological  
VOC Subsurface Soil Distribution Map**

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INGLESIDE, SAN PATRICIO COUNTY, TEXAS  
PROJ NO. 59752   FILE NAME: Falcon Refinery Base Map

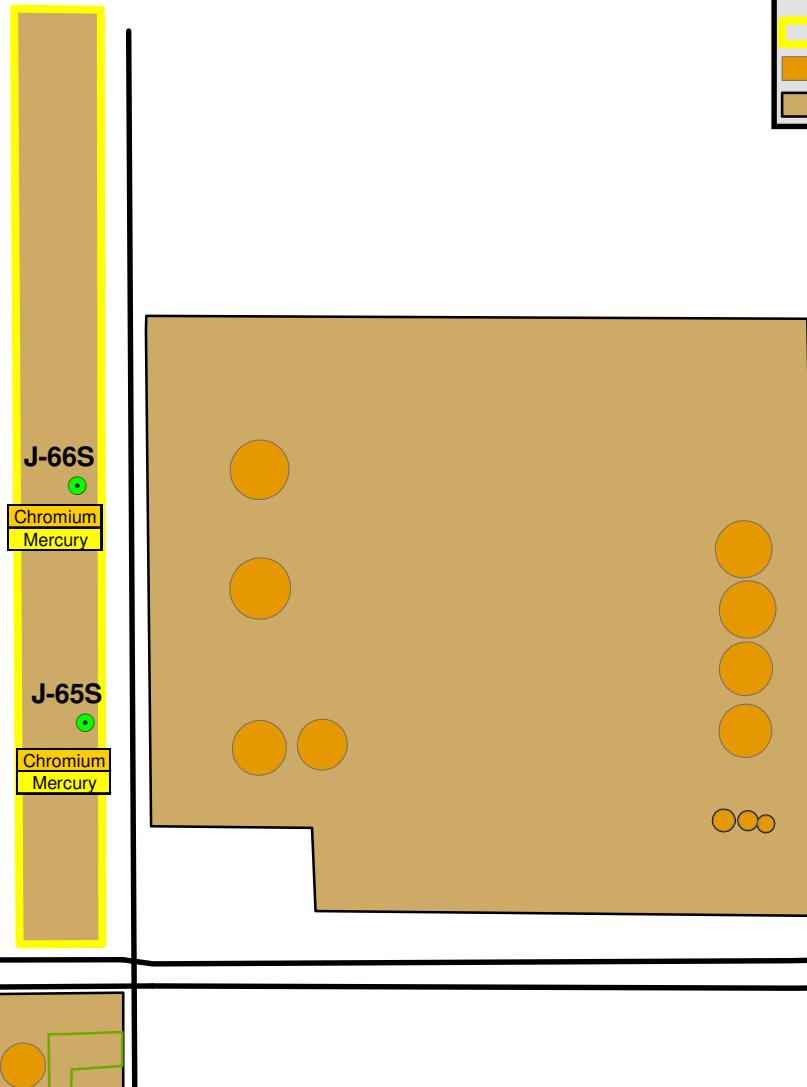
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Phone: 512-926-6650 Fax: 512-926-3312  
[www.kleinfelder.com](http://www.kleinfelder.com)

FIGURE

**36B**

J-65S FR-237	
Aluminum	1620
Arsenic	0.57 B
Barium	28.5
Beryllium	0.072 B
Chromium	1.4
Hex Chrom	1.3 B
Cobalt	0.24 B
Copper	1.9 B
Iron	885
Lead	6.5
Manganese	14.5
Mercury	0.0045
Nickel	0.39 B
Vanadium	1.7 B
Zinc	23

J-66S FR-239	
Aluminum	775
Arsenic	0.34 B
Barium	21.8
Beryllium	0.054 B
Chromium	1.1
Copper	1.9 B
Iron	565
Lead	7.9
Manganese	24.3
Mercury	0.0069
Nickel	0.27 B
Vanadium	1.1 B
Zinc	21.2



#### Notes:

1. Results are posted in mg/kg

  Exceeds Median Background Limit

2. Qualifiers:

  Exceeds Earthworm and Plant Limits

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0      80      160  
Feet

DATE DRAWN: 5/7/08      DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

#### AOC-7 Ecological Metal Surface Soil Distribution Map

FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752

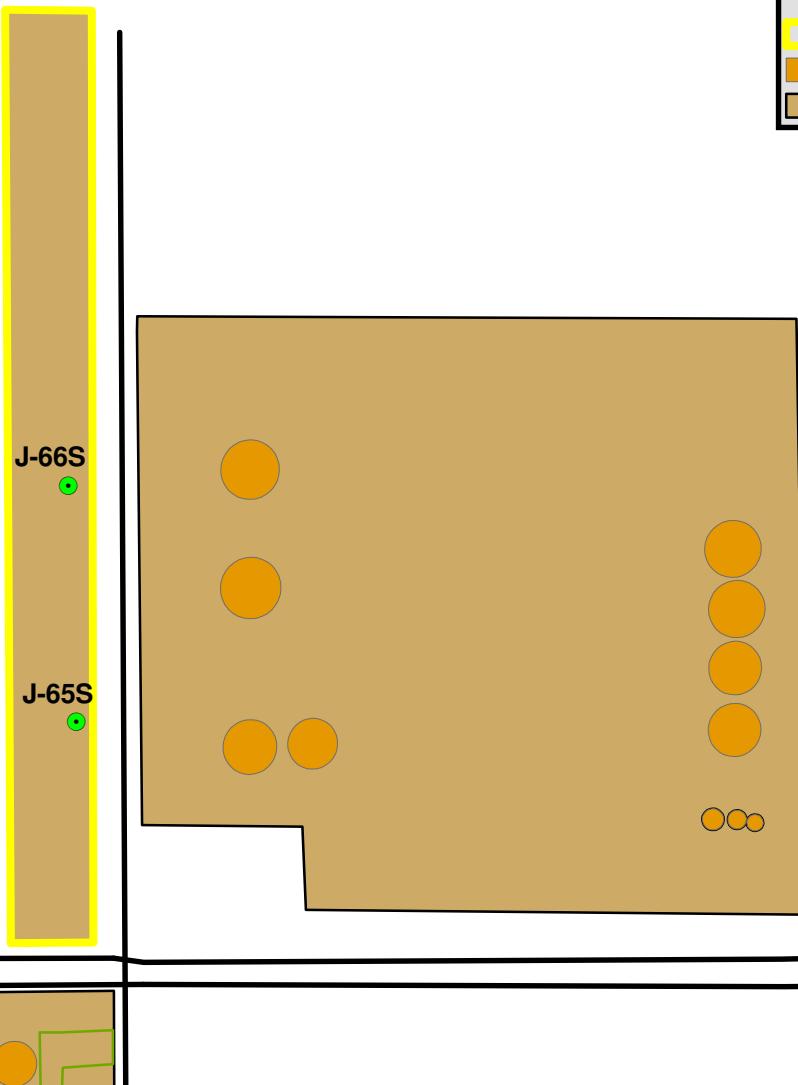
FILE NAME: Falcon Refinery Base Map

**J-65S**  
**FR-237**

Methylene chloride	0.0032 J
--------------------	----------

**J-66S**  
**FR-239**

Methylene chloride	0.0037 J
--------------------	----------

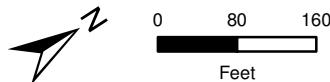


**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than  
the SDL but less than the method  
quantitation limit (MQL)



DATE DRAWN: 5/7/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-7  
Ecological  
VOC Surface Soil Distribution Map**

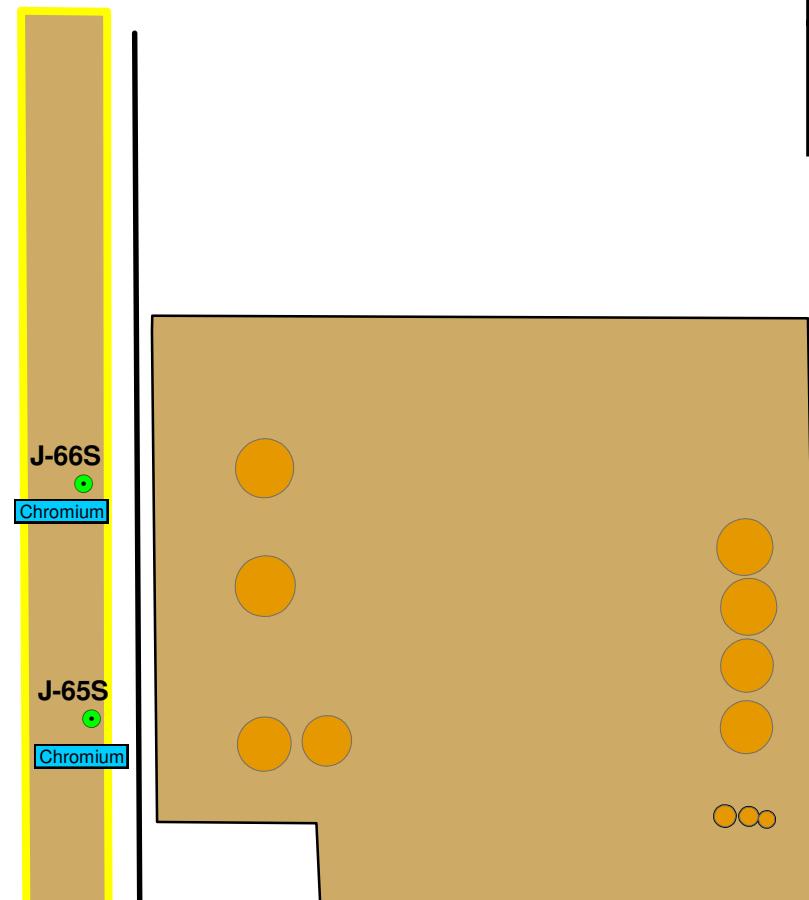
FALCON REFINERY  
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

Legend	
●	Sample Points
—	Roads
—	Gravel/Dirt Road
■	AOC-7
■	Refinery Tanks
■	AOCs

J-65S FR-238	
Aluminum	1190
Arsenic	0.85 B
Barium	15.2 B
Beryllium	0.058 B
Chromium	0.9 B
Hex Chrom	3.9
Copper	1.3 B
Iron	515
Lead	5.8
Manganese	7.7
Mercury	0.0033 B
Vanadium	1.3 B
Zinc	12.4

J-66S FR-240	
Aluminum	553
Barium	4.7 B
Beryllium	0.036 B
Chromium	0.53 B
Hex Chrom	1.1 B
Copper	0.74 B
Iron	176
Lead	1.5
Manganese	3
Vanadium	0.72 B
Zinc	1.7 B



Notes:

1. Results are posted in mg/kg

Exceeds Earthworm Limit

2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)



0 90 180  
Feet

DATE DRAWN: 5/7/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-7  
Ecological  
Metal Subsurface Soil Distribution Map**

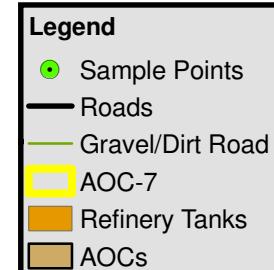
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PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map



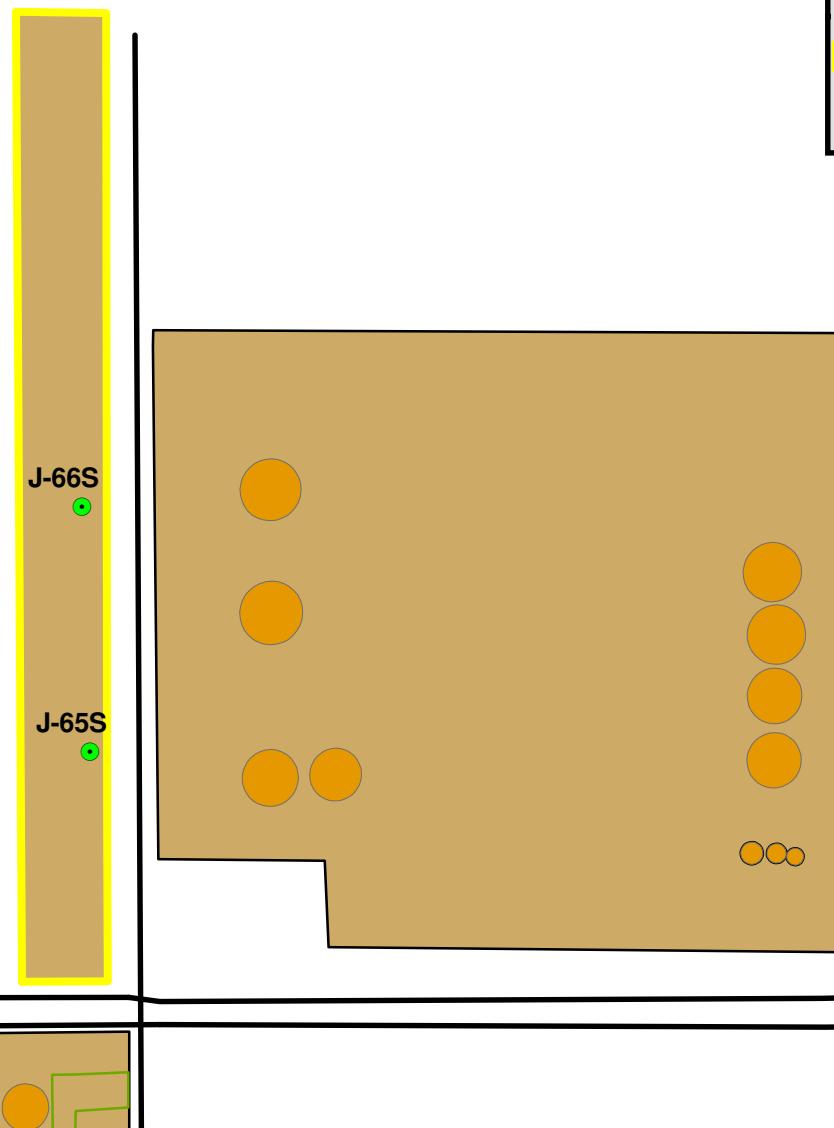
FIGURE

**38A**



<b>J-65S</b>	
<b>FR-238</b>	
Methylene Chloride	0.004 J

<b>J-66S</b>	
<b>FR-240</b>	
Methylene Chloride	0.0034 J



**Notes:**

1. Results are posted in mg/kg

2. Qualifiers:

J = Concentration greater than  
the SDL but less than the method  
quantitation limit (MQL)



0 80 160  
Feet

DATE DRAWN: 5/7/08 DATE REVISED:

DRAFTED BY: C. SEATON

CHECKED BY: S. HALASZ

APPROVED BY:

**AOC-7**  
**Ecological**  
**VOC Subsurface Soil Distribution Map**

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FIGURE

**38B**